

Supplementary

References selected by the systematic literature review:

1. Albetis, J.; Duthoit, S.; Guttler, F.; Jacquin, A.; Goulard, M.; Poilvé, H.; Féret, J.-B.; Dedieu, G. Detection of Flavescence dorée Grapevine Disease Using Unmanned Aerial Vehicle (UAV) Multispectral Imagery. *Remote Sens.* **2017**, *9*, 308.
2. Andrieu, B.; Baret, F.; Jacquemoud, S.; Malthus, T.; Steven, M. Evaluation of an improved version of SAIL model for simulating bidirectional reflectance of sugar beet canopies. *Remote Sens. Environ.* **1997**, *60*, 247-257.
3. Atzberger, C. Object-based retrieval of biophysical canopy variables using artificial neural nets and radiative transfer models. *Remote Sens. Environ.* **2004**, *93*, 53-67.
4. Atzberger, C. Inverting the PROSAIL canopy reflectance model using neural nets trained on streamlined databases. *Journal of Spectral Imaging* **2010**, *1*.
5. Atzberger, C.; Darvishzadeh, R.; Immitzer, M.; Schlerf, M.; Skidmore, A.; le Maire, G. Comparative analysis of different retrieval methods for mapping grassland leaf area index using airborne imaging spectroscopy. *Int. J. Appl. Earth Obs. Geoinf.* **2015**, *43*, 19-31.
6. Atzberger, C.; Darvishzadeh, R.; Schlerf, M.; Le Maire, G. Suitability and adaptation of PROSAIL radiative transfer model for hyperspectral grassland studies. *Remote Sens. Lett.* **2013**, *4*, 56-65.
7. Atzberger, C.; Richter, K. Spatially constrained inversion of radiative transfer models for improved LAI mapping from future Sentinel-2 imagery. *Remote Sens. Environ.* **2012**, *120*, 208-218.
8. Bacour, C.; Baret, F.; Béal, D.; Weiss, M.; Pavageau, K. Neural network estimation of LAI, fAPAR, fCover and LAI×Cab, from top of canopy MERIS reflectance data: Principles and validation. *Remote Sens. Environ.* **2006**, *105*, 313-325.
9. Bacour, C.; Jacquemoud, S.; Leroy, M.; Hauteceœur, O.; Weiss, M.; Prévot, L.; Bruguier, N.; Chauki, H. Reliability of the estimation of vegetation characteristics by inversion of three canopy reflectance models on airborne POLDER data. *Agronomie* **2002**, *22*, 555-565.
10. Bacour, C.; Jacquemoud, S.; Tourbier, Y.; Dechambre, M.; Frangi, J.P. Design and analysis of numerical experiments to compare four canopy reflectance models. *Remote Sens. Environ.* **2002**, *79*, 72-83.
11. Baret, F.; Buis, S. Estimating canopy characteristics from remote sensing observations: Review of methods and associated problems. In *Advances in land remote Sensing*, Springer: 2008; pp 173-201.
12. Baret, F.; Clevers, J.G.P.W.; Steven, M.D. The robustness of canopy gap fraction estimates from red and near-infrared reflectances: A comparison of approaches. *Remote Sens. Environ.* **1995**, *54*, 141-151.
13. Baret, F.; Hagolle, O.; Geiger, B.; Bicheron, P.; Miras, B.; Huc, M.; Berthelot, B.; Niño, F.; Weiss, M.; Samain, O., et al. LAI, fAPAR and fCover CYCLOPES global products derived from VEGETATION: Part 1: Principles of the algorithm. *Remote Sens. Environ.* **2007**, *110*, 275-286.
14. Baret, F.; Jacquemoud, S.; Guyot, G.; Leprieux, C. Modeled analysis of the biophysical nature of spectral shifts and comparison with information content of broad bands. *Remote Sens. Environ.* **1992**, *41*, 133-142.
15. Baret, F.; Vanderbilt, V.C.; Steven, M.D.; Jacquemoud, S. Use of spectral analogy to evaluate canopy reflectance sensitivity to leaf optical properties. *Remote Sens. Environ.* **1994**, *48*, 253-260.
16. Barman, D.; Sehgal, V.K.; Sahoo, R.N.; Nagarajan, S. Relationship of bidirectional reflectance of wheat with biophysical parameters and its radiative transfer modeling using PROSAIL. *J Indian Soc. Remote* **2010**, *38*, 35-44.
17. Bartholomeus, H.; Kooistra, L.; Stevens, A.; van Leeuwen, M.; van Wesemael, B.; Ben-Dor, E.; Tychon, B. Soil Organic Carbon mapping of partially vegetated agricultural fields with imaging spectroscopy. *Int. J. Appl. Earth Obs. Geoinf.* **2011**, *13*, 81-88.
18. Battude, M.; Al Bitar, A.; Morin, D.; Cros, J.; Huc, M.; Marais Sicre, C.; Le Dantec, V.; Demarez, V. Estimating maize biomass and yield over large areas using high spatial and temporal resolution Sentinel-2 like remote sensing data. *Remote Sens. Environ.* **2016**, *184*, 668-681.
19. Botha, E.J.; Leblon, B.; Zebarth, B.; Watmough, J. Non-destructive estimation of potato leaf chlorophyll from canopy hyperspectral reflectance using the inverted PROSAIL model. *Int. J. Appl. Earth Obs. Geoinf.* **2007**, *9*, 360-374.
20. Botha, E.J.; Leblon, B.; Zebarth, B.J.; Watmough, J. Non-destructive estimation of wheat leaf chlorophyll content from hyperspectral measurements through analytical model inversion. *Int. J. Remote Sens.* **2010**, *31*, 1679-1697.

21. Bowyer, P.; Danson, F.M. Sensitivity of spectral reflectance to variation in live fuel moisture content at leaf and canopy level. *Remote Sens. Environ.* **2004**, *92*, 297-308.
22. Breunig, F.M.; Galvão, L.S.; dos Santos, J.R.; Gitelson, A.A.; de Moura, Y.M.; Teles, T.S.; Gaida, W. Spectral anisotropy of subtropical deciduous forest using MISR and MODIS data acquired under large seasonal variation in solar zenith angle. *Int. J. Appl. Earth Obs. Geoinf.* **2015**, *35*, Part B, 294-304.
23. Breunig, F.M.; Galvao, L.S.; Formaggio, A.R.; Epiphanyo, J.C.N. Influence of data acquisition geometry on soybean spectral response simulated by the prosail model. *Engenharia Agricola* **2013**, *33*, 176-187.
24. Broge, N.H.; Leblanc, E. Comparing prediction power and stability of broadband and hyperspectral vegetation indices for estimation of green leaf area index and canopy chlorophyll density. *Remote Sens. Environ.* **2001**, *76*, 156-172.
25. Brown, L.A.; Dash, J.; Ogutu, B.O.; Richardson, A.D. On the relationship between continuous measures of canopy greenness derived using near-surface remote sensing and satellite-derived vegetation products. *Agric. For. Meteorol* **2017**, *247*, 280-292.
26. Bsaibes, A.; Courault, D.; Baret, F.; Weiss, M.; Olioso, A.; Jacob, F.; Hagolle, O.; Marloie, O.; Bertrand, N.; Desfond, V., *et al.* Albedo and LAI estimates from FORMOSAT-2 data for crop monitoring. *Remote Sens. Environ.* **2009**, *113*, 716-729.
27. Calderon, R.; Montes-Borrego, M.; Landa, B.B.; Navas-Cortes, J.A.; Zarco-Tejada, P.J. Detection of downy mildew of opium poppy using high-resolution multi-spectral and thermal imagery acquired with an unmanned aerial vehicle. *Precis. Agric.* **2014**, *15*, 639-661.
28. Camacho, F.; Cernicharo, J.; Lacaze, R.; Baret, F.; Weiss, M. GEOV1: LAI, FAPAR essential climate variables and FCOVER global time series capitalizing over existing products. Part 2: Validation and intercomparison with reference products. *Remote Sens. Environ.* **2013**, *137*, 310-329.
29. Campos-Taberner, M.; Garcia-Haro, F.J.; Camps-Valls, G.; Grau-Muedra, G.; Nutini, F.; Busetto, L.; Katsantonis, D.; Stavrakoudis, D.; Minakou, C.; Gatti, L., *et al.* Exploitation of SAR and Optical Sentinel Data to Detect Rice Crop and Estimate Seasonal Dynamics of Leaf Area Index. *Remote Sens.* **2017**, *9*.
30. Campos-Taberner, M.; Garcia-Haro, F.J.; Camps-Valls, G.; Grau-Muedra, G.; Nutini, F.; Crema, A.; Boschetti, M. Multitemporal and multiresolution leaf area index retrieval for operational local rice crop monitoring. *Remote Sens. Environ.* **2016**, *187*, 102-118.
31. Casa, R.; Baret, F.; Buis, S.; Lopez-Lozano, R.; Pascucci, S.; Palombo, A.; Jones, H.G. Estimation of maize canopy properties from remote sensing by inversion of 1-D and 4-D models. *Precis. Agric.* **2010**, *11*, 319-334.
32. Casa, R.; Jones, H.G. Retrieval of crop canopy properties: a comparison between model inversion from hyperspectral data and image classification. *Int. J. Remote Sens.* **2004**, *25*, 1119-1130.
33. Casas, A.; Riaño, D.; Ustin, S.L.; Dennison, P.; Salas, J. Estimation of water-related biochemical and biophysical vegetation properties using multitemporal airborne hyperspectral data and its comparison to MODIS spectral response. *Remote Sens. Environ.* **2014**, *148*, 28-41.
34. Castaldi, F.; Casa, R.; Pelosi, F.; Yang, H. Influence of acquisition time and resolution on wheat yield estimation at the field scale from canopy biophysical variables retrieved from SPOT satellite data. *Int. J. Remote Sens.* **2015**, *36*, 2438-2459.
35. Castillo, J.A.A.; Apan, A.A.; Maraseni, T.N.; Salmo Iii, S.G. Estimation and mapping of above-ground biomass of mangrove forests and their replacement land uses in the Philippines using Sentinel imagery. *Isprs J Photogramm* **2017**, *134*, 70-85.
36. Cernicharo, J.; Verger, A.; Camacho, F. Empirical and Physical Estimation of Canopy Water Content from CHRIS/PROBA Data. *Remote Sens.* **2013**, *5*, 5265-5284.
37. Chakraborty, D.; Sehgal, V.K.; Sahoo, R.N.; Pradhan, S.; Gupta, V.K. Study of the Anisotropic Reflectance Behaviour of Wheat Canopy to Evaluate the Performance of Radiative Transfer Model PROSAIL5B. *J Indian Soc. Remote* **2015**, *43*, 297-310.
38. Chaurasia, S.; Dadhwal, V.K. Comparison of principal component inversion with VI-empirical approach for LAI estimation using simulated reflectance data. *Int. J. Remote Sens.* **2004**, *25*, 2881-2887.
39. Chehbouni, A.; Lo Seen, D.; Njoku, E.G.; Monteny, B.M. Examination of the difference between radiative and aerodynamic surface temperatures over sparsely vegetated surfaces. *Remote Sens. Environ.* **1996**, *58*, 177-186.
40. Chen, P.; Haboudane, D.; Tremblay, N.; Wang, J.; Vigneault, P.; Li, B. New spectral indicator assessing the efficiency of crop nitrogen treatment in corn and wheat. *Remote Sens. Environ.* **2010**, *114*, 1987-1997.
41. Cheng, T.; Riaño, D.; Koltunov, A.; Whiting, M.L.; Ustin, S.L.; Rodriguez, J. Detection of diurnal variation in orchard canopy water content using MODIS/ASTER airborne simulator (MASTER) data. *Remote Sens. Environ.* **2013**, *132*, 1-12.

42. Cheng, X.J.; Yang, G.J.; Xu, X.G.; Chen, T.E.; Li, Z.H.; Feng, H.K.; Wang, D. Estimating Canopy Water Content in Wheat Based on New Vegetation Water Index. *Spectrosc. Spect. Anal.* **2014**, *34*, 3391-3396.
43. Cheng, Y.-B.; Zarco-Tejada, P.J.; Riaño, D.; Rueda, C.A.; Ustin, S.L. Estimating vegetation water content with hyperspectral data for different canopy scenarios: Relationships between AVIRIS and MODIS indexes. *Remote Sens. Environ.* **2006**, *105*, 354-366.
44. Cho, M.A.; Skidmore, A.K.; Atzberger, C. Towards red-edge positions less sensitive to canopy biophysical parameters for leaf chlorophyll estimation using properties optiques spectrales des feuilles (PROSPECT) and scattering by arbitrarily inclined leaves (SAILH) simulated data. *Int. J. Remote Sens.* **2008**, *29*, 2241-2255.
45. Claverie, M.; Vermote, E.F.; Franch, B.; Masek, J.G. Evaluation of the Landsat-5 TM and Landsat-7 ETM + surface reflectance products. *Remote Sens. Environ.* **2015**, *169*, 390-403.
46. Claverie, M.; Vermote, E.F.; Weiss, M.; Baret, F.; Hagolle, O.; Demarez, V. Validation of coarse spatial resolution LAI and FAPAR time series over cropland in southwest France. *Remote Sens. Environ.* **2013**, *139*, 216-230.
47. Clevers, J.; Kooistra, L. Using Hyperspectral Remote Sensing Data for Retrieving Canopy Chlorophyll and Nitrogen Content. *Ieee J-Stars* **2012**, *5*, 574-583.
48. Clevers, J.G.P.W. A simplified approach for yield prediction of sugar beet based on optical remote sensing data. *Remote Sens. Environ.* **1997**, *61*, 221-228.
49. Clevers, J.G.P.W.; Büker, C.; van Leeuwen, H.J.C.; Bouman, B.A.M. A framework for monitoring crop growth by combining directional and spectral remote sensing information. *Remote Sens. Environ.* **1994**, *50*, 161-170.
50. Clevers, J.G.P.W.; de Jong, S.M.; Epema, G.F.; van der Meer, F.; Bakker, W.H.; Skidmore, A.K.; Addink, E.A. MERIS and the red-edge position. *Int. J. Appl. Earth Obs. Geoinf.* **2001**, *3*, 313-320.
51. Clevers, J.G.P.W.; Kooistra, L.; Schaepman, M.E. Using spectral information from the NIR water absorption features for the retrieval of canopy water content. *Int. J. Appl. Earth Obs. Geoinf.* **2008**, *10*, 388-397.
52. Clevers, J.G.P.W.; Kooistra, L.; Schaepman, M.E. Estimating canopy water content using hyperspectral remote sensing data. *Int. J. Appl. Earth Obs. Geoinf.* **2010**, *12*, 119-125.
53. Clevers, J.G.P.W.; Van Leeuwen, H.J.C.; Verhoef, W. Estimating the fraction APAR by means of vegetation indices: A sensitivity analysis with a combined prospect-sail model. *Remote Sens. Rev.* **1994**, *9*, 203-220.
54. Clevers, J.G.P.W.; Verhoef, W. LAI estimation by means of the WdVI: A sensitivity analysis with a combined PROSPECT-SAIL model. *Remote Sens. Rev.* **1993**, *7*, 43-64.
55. Colombo, R.; Merom, M.; Marchesi, A.; Busetto, L.; Rossini, M.; Giardino, C.; Panigada, C. Estimation of leaf and canopy water content in poplar plantations by means of hyperspectral indices and inverse modeling. *Remote Sens. Environ.* **2008**, *112*, 1820-1834.
56. Combal, B.; Baret, F.; Weiss, M. Improving canopy variables estimation from remote sensing data by exploiting ancillary information. Case study on sugar beet canopies. *Agronomie* **2002**, *22*, 205-215.
57. Combal, B.; Baret, F.; Weiss, M.; Trubuil, A.; Macé, D.; Pragnère, A.; Myneni, R.; Knyazikhin, Y.; Wang, L. Retrieval of canopy biophysical variables from bidirectional reflectance: Using prior information to solve the ill-posed inverse problem. *Remote Sens. Environ.* **2003**, *84*, 1-15.
58. Danner, M.; Berger, K.; Wocher, M.; Mauser, W.; Hank, T. Retrieval of Biophysical Crop Variables from Multi-Angular Canopy Spectroscopy. *Remote Sens.* **2017**, *9*, 21.
59. Darvishzadeh, R.; Atzberger, C.; Skidmore, A.; Schlerf, M. Mapping grassland leaf area index with airborne hyperspectral imagery: A comparison study of statistical approaches and inversion of radiative transfer models. *Isprs J Photogramm* **2011**, *66*, 894-906.
60. Darvishzadeh, R.; Matkan, A.A.; Ahangar, A.D. Inversion of a Radiative Transfer Model for Estimation of Rice Canopy Chlorophyll Content Using a Lookup-Table Approach. *Ieee J-Stars* **2012**, *5*, 1222-1230.
61. Darvishzadeh, R.; Skidmore, A.; Schlerf, M.; Atzberger, C. Inversion of a radiative transfer model for estimating vegetation LAI and chlorophyll in a heterogeneous grassland. *Remote Sens. Environ.* **2008**, *112*, 2592-2604.
62. de Jong, S.M.; Addink, E.A.; Doelman, J.C. Detecting leaf-water content in Mediterranean trees using high-resolution spectrometry. *Int. J. Appl. Earth Obs. Geoinf.* **2014**, *27, Part B*, 128-136.
63. de Wit, A.; Duveiller, G.; Defourny, P. Estimating regional winter wheat yield with WOFOST through the assimilation of green area index retrieved from MODIS observations. *Agric. For. Meteorol* **2012**, *164*, 39-52.

64. Delegido, J.; Van Wittenberghe, S.; Verrelst, J.; Ortiz, V.; Veroustraete, F.; Valcke, R.; Samson, R.; Rivera, J.P.; Tenjo, C.; Moreno, J. Chlorophyll content mapping of urban vegetation in the city of Valencia based on the hyperspectral NAOC index. *Ecol. Indicators* **2014**, *40*, 34-42.
65. Dente, L.; Satalino, G.; Mattia, F.; Rinaldi, M. Assimilation of leaf area index derived from ASAR and MERIS data into CERES-Wheat model to map wheat yield. *Remote Sens. Environ.* **2008**, *112*, 1395-1407.
66. Dian, Y.Y.; Le, Y.; Fang, S.H.; Xu, Y.R.; Yao, C.H.; Liu, G. Influence of Spectral Bandwidth and Position on Chlorophyll Content Retrieval at Leaf and Canopy Levels. *J Indian Soc. Remote* **2016**, *44*, 583-593.
67. Diaz, G.M.; Mohr-Bell, D.; Lencinas, J.D.; Menger, M.; Del Valle, H.F. Quantitative remote sensing to estimate basal area in *Nothofagus pumilio* (Nothofagaceae) forest: The role of leaf area index as ancillary information. *Rev. Chil. Hist. Nat.* **2011**, *84*, 509-521.
68. Ding, Y.; Zhang, H.; Zhao, K.; Zheng, X. Investigating the accuracy of vegetation index-based models for estimating the fractional vegetation cover and the effects of varying soil backgrounds using in situ measurements and the PROSAIL model. *Int. J. Remote Sens.* **2017**, *38*, 4206-4223.
69. Ding, Y.L.; Zhang, H.Y.; Li, Z.W.; Xin, X.P.; Zheng, X.M.; Zhao, K. Comparison of fractional vegetation cover estimations using dimidiate pixel models and look-up table inversions of the PROSAIL model from Landsat 8 OLI data. *J. Appl. Remote Sens.* **2016**, *10*.
70. Doktor, D.; Lausch, A.; Spengler, D.; Thurner, M. Extraction of Plant Physiological Status from Hyperspectral Signatures Using Machine Learning Methods. *Remote Sens.* **2014**, *6*, 12247-12274.
71. Dong, T.; Wu, B.; Meng, J.; Du, X.; Shang, J. Sensitivity analysis of retrieving fraction of absorbed photosynthetically active radiation (FPAR) using remote sensing data. *Acta Ecologica Sinica* **2016**, *36*, 1-7.
72. Dong, T.F.; Meng, J.H.; Shang, J.L.; Liu, J.G.; Wu, B.F.; Huffman, T. Modified vegetation indices for estimating crop fraction of absorbed photosynthetically active radiation. *Int. J. Remote Sens.* **2015**, *36*, 3097-3113.
73. Dong, Y.; Zhao, C.; Yang, G.; Chen, L.; Wang, J.; Feng, H. Integrating a very fast simulated annealing optimization algorithm for crop leaf area index variational assimilation. *Math. Comput. Model* **2013**, *58*, 877-885.
74. Dong, Y.Y.; Wang, J.H.; Li, C.J.; Yang, G.J.; Wang, Q.; Liu, F.; Zhao, J.L.; Wang, H.F.; Huang, W.J. Comparison and Analysis of Data Assimilation Algorithms for Predicting the Leaf Area Index of Crop Canopies. *Ieee J-Stars* **2013**, *6*, 188-201.
75. Dorigo, W.; Richter, R.; Baret, F.; Bamler, R.; Wagner, W. Enhanced Automated Canopy Characterization from Hyperspectral Data by a Novel Two Step Radiative Transfer Model Inversion Approach. *Remote Sens.* **2009**, *1*, 1139-1170.
76. Dorigo, W.A. Improving the Robustness of Cotton Status Characterisation by Radiative Transfer Model Inversion of Multi-Angular CHRIS/PROBA Data. *Ieee J-Stars* **2012**, *5*, 18-29.
77. Dorigo, W.A.; Zurita-Milla, R.; de Wit, A.J.W.; Brazile, J.; Singh, R.; Schaepman, M.E. A review on reflective remote sensing and data assimilation techniques for enhanced agroecosystem modeling. *Int. J. Appl. Earth Obs. Geoinf.* **2007**, *9*, 165-193.
78. Du, H.S.; Jiang, H.L.; Zhang, L.F.; Mao, D.H.; Wang, Z.M. Evaluation of Spectral Scale Effects in Estimation of Vegetation Leaf Area Index Using Spectral Indices Methods. *Chinese Geographical Science* **2016**, *26*, 731-744.
79. Du, L.T.; Tian, Q.J.; Wang, L. Impact of Vegetation Structure on Drought Indices Based on MODIS Spectrum. *Spectrosc. Spect. Anal.* **2015**, *35*, 982-986.
80. Duan, S.B.; Li, Z.L.; Wu, H.; Tang, B.H.; Ma, L.L.; Zhao, E.Y.; Li, C.R. Inversion of the PROSAIL model to estimate leaf area index of maize, potato, and sunflower fields from unmanned aerial vehicle hyperspectral data. *Int. J. Appl. Earth Obs. Geoinf.* **2014**, *26*, 12-20.
81. Durbha, S.S.; King, R.L.; Younan, N.H. Support vector machines regression for retrieval of leaf area index from multiangle imaging spectroradiometer. *Remote Sens. Environ.* **2007**, *107*, 348-361.
82. D'Urso, G.; Richter, K.; Calera, A.; Osann, M.A.; Escadafal, R.; Garatuza-Pajan, J.; Hanich, L.; Perdigao, A.; Tapia, J.B.; Vuolo, F. Earth Observation products for operational irrigation management in the context of the PLEIADeS project. *Agric. Water Manage.* **2010**, *98*, 271-282.
83. Dusseux, P.; Hubert-Moy, L.; Corpetti, T.; Vertès, F. Evaluation of SPOT imagery for the estimation of grassland biomass. *Int. J. Appl. Earth Obs. Geoinf.* **2015**, *38*, 72-77.
84. Duveiller, G.; Baret, F.; Defourny, P. Crop specific green area index retrieval from MODIS data at regional scale by controlling pixel-target adequacy. *Remote Sens. Environ.* **2011**, *115*, 2686-2701.
85. Duveiller, G.; Baret, F.; Defourny, P. Remotely sensed green area index for winter wheat crop monitoring: 10-Year assessment at regional scale over a fragmented landscape. *Agric. For. Meteorol* **2012**, *166-167*, 156-168.

86. Duveiller, G.; Weiss, M.; Baret, F.; Defourny, P. Retrieving wheat Green Area Index during the growing season from optical time series measurements based on neural network radiative transfer inversion. *Remote Sens. Environ.* **2011**, *115*, 887-896.
87. Dziki, S.; Gush, M.B.; Le Maitre, D.C.; Maherry, A.; Jovanovic, N.Z.; Ramoelo, A.; Cho, M.A. Quantifying potential water savings from clearing invasive alien Eucalyptus camaldulensis using in situ and high resolution remote sensing data in the Berg River Catchment, Western Cape, South Africa. *For. Ecol. Manage.* **2016**, *361*, 69-80.
88. Eitel, J.U.H.; Long, D.S.; Gessier, P.E.; Hunt, E.R.; Brown, D.J. Sensitivity of Ground-Based Remote Sensing Estimates of Wheat Chlorophyll Content to Variation in Soil Reflectance. *Soil Sci. Soc. Am. J.* **2009**, *73*, 1715-1723.
89. Eitel, J.U.H.; Long, D.S.; Gessler, P.E.; Hunt, E.R. Combined Spectral Index to Improve Ground-Based Estimates of Nitrogen Status in Dryland Wheat. *Agron. J.* **2008**, *100*, 1694-1702.
90. Eitel, J.U.H.; Vierling, L.A.; Litvak, M.E.; Long, D.S.; Schulthess, U.; Ager, A.A.; Krofcheck, D.J.; Stoscheck, L. Broadband, red-edge information from satellites improves early stress detection in a New Mexico conifer woodland. *Remote Sens. Environ.* **2011**, *115*, 3640-3646.
91. El Hajj, M.; Baghdadi, N.; Zribi, M.; Belaud, G.; Cheviron, B.; Courault, D.; Charron, F. Soil moisture retrieval over irrigated grassland using X-band SAR data. *Remote Sens. Environ.* **2016**, *176*, 202-218.
92. Fei, Y.; Jiulin, S.; Hongliang, F.; Zuofang, Y.; Jiahua, Z.; Yunqiang, Z.; Kaishan, S.; Zongming, W.; Maogui, H. Comparison of different methods for corn LAI estimation over northeastern China. *Int. J. Appl. Earth Obs. Geoinf.* **2012**, *18*, 462-471.
93. Feilhauer, H.; Somers, B.; van der Linden, S. Optical trait indicators for remote sensing of plant species composition: Predictive power and seasonal variability. *Ecol. Indicators* **2017**, *73*, 825-833.
94. Fourty, T.; Baret, F. Vegetation water and dry matter contents estimated from top-of-the-atmosphere reflectance data: A simulation study. *Remote Sens. Environ.* **1997**, *61*, 34-45.
95. Frampton, W.J.; Dash, J.; Watmough, G.; Milton, E.J. Evaluating the capabilities of Sentinel-2 for quantitative estimation of biophysical variables in vegetation. *Isprs J Photogramm* **2013**, *82*, 83-92.
96. Galvão, L.S.; Breunig, F.M.; Santos, J.R.d.; Moura, Y.M.d. View-illumination effects on hyperspectral vegetation indices in the Amazonian tropical forest. *Int. J. Appl. Earth Obs. Geoinf.* **2013**, *21*, 291-300.
97. Gomez-Dans, J.L.; Lewis, P.E.; Disney, M. Efficient Emulation of Radiative Transfer Codes Using Gaussian Processes and Application to Land Surface Parameter Inferences. *Remote Sens.* **2016**, *8*.
98. Gond, V.; de Pury, D.G.G.; Veroustraete, F.; Ceulemans, R. Seasonal variations in leaf area index, leaf chlorophyll, and water content; scaling-up to estimate fAPAR and carbon balance in a multilayer, multispecies temperate forest. *Tree Physiol.* **1999**, *19*, 673-679.
99. Gonsamo, A. Leaf area index retrieval using gap fractions obtained from high resolution satellite data: Comparisons of approaches, scales and atmospheric effects. *Int. J. Appl. Earth Obs. Geoinf.* **2010**, *12*, 233-248.
100. Gonsamo, A.; Pellikka, P. The sensitivity based estimation of leaf area index from spectral vegetation indices. *Isprs J Photogramm* **2012**, *70*, 15-25.
101. Gonzalez-Sanpedro, M.C.; Le Toan, T.; Moreno, J.; Kergoat, L.; Rubio, E. Seasonal variations of leaf area index of agricultural fields retrieved from Landsat data. *Remote Sens. Environ.* **2008**, *112*, 810-824.
102. Gu, C.Y.; Du, H.Q.; Mao, F.J.; Han, N.; Zhou, G.M.; Xu, X.J.; Sun, S.B.; Gao, G.L. Global sensitivity analysis of PROSAIL model parameters when simulating Moso bamboo forest canopy reflectance. *Int. J. Remote Sens.* **2016**, *37*, 5270-5286.
103. Guo, C.; Zhang, L.; Zhou, X.; Zhu, Y.; Cao, W.; Qiu, X.; Cheng, T.; Tian, Y. Integrating remote sensing information with crop model to monitor wheat growth and yield based on simulation zone partitioning. *Precis. Agric.* **2017**.
104. Guo, J.; Wang, Q.; Tong, Y.; Fei, D.; Liu, J. Effect of solar radiation intensity and observation angle on canopy reflectance hyperspectra for winter wheat. *Nongye Gongcheng Xuebao* **2016**, *32*, 157-163.
105. Haboudane, D.; Tremblay, N.; Miller, J.R.; Vigneault, P. Remote estimation of crop chlorophyll content using spectral indices derived from hyperspectral data. *IEEE Trans. Geosci. Remote Sens.* **2008**, *46*, 423-437.
106. He, B.; Quan, X.; Xu, D.; Yin, C.; Liao, Z.; Qiu, S.; Ge, J.; Zhang, Z. Retrieving Grassland Canopy Water Content by Considering the Information from Neighboring Pixels. *Photogrammetric Engineering & Remote Sensing* **2017**, *83*, 553-565.
107. He, B.B.; Liao, Z.M.; Quan, X.W.; Li, X.; Hu, J.J. A Global Grassland Drought Index (GDI) Product: Algorithm and Validation. *Remote Sens.* **2015**, *7*, 12704-12736.
108. Herrmann, I.; Pimstein, A.; Karnieli, A.; Cohen, Y.; Alchanatis, V.; Bonfil, D.J. LAI assessment of wheat and potato crops by VENUS and Sentinel-2 bands. *Remote Sens. Environ.* **2011**, *115*, 2141-2151.

109. Hilker, T.; Galvão, L.S.; Aragão, L.E.O.C.; de Moura, Y.M.; do Amaral, C.H.; Lyapustin, A.I.; Wu, J.; Albert, L.P.; Ferreira, M.J.; Anderson, L.O., *et al.* Vegetation chlorophyll estimates in the Amazon from multi-angle MODIS observations and canopy reflectance model. *Int. J. Appl. Earth Obs. Geoinf.* **2017**, *58*, 278-287.
110. Hilker, T.; Gitelson, A.; Coops, N.C.; Hall, F.G.; Black, T.A. Tracking plant physiological properties from multi-angular tower-based remote sensing. *Oecologia* **2011**, *165*, 865-876.
111. Hilker, T.; Lepine, L.; Coops, N.C.; Jassal, R.S.; Black, T.A.; Wulder, M.A.; Ollinger, S.; Tsui, O.; Day, M. Assessing the impact of N-fertilization on biochemical composition and biomass of a Douglas-fir canopy—A remote sensing approach. *Agric. For. Meteorol* **2012**, *153*, 124-133.
112. Houborg, R.; Cescatti, A.; Migliavacca, M.; Kustas, W.P. Satellite retrievals of leaf chlorophyll and photosynthetic capacity for improved modeling of GPP. *Agric. For. Meteorol* **2013**, *177*, 10-23.
113. Houborg, R.; Fisher, J.B.; Skidmore, A.K. Advances in remote sensing of vegetation function and traits. *Int. J. Appl. Earth Obs. Geoinf.* **2015**, *43*, 1-6.
114. Houborg, R.; McCabe, M.; Cescatti, A.; Gao, F.; Schull, M.; Gitelson, A. Joint leaf chlorophyll content and leaf area index retrieval from Landsat data using a regularized model inversion system (REGFLEC). *Remote Sens. Environ.* **2015**, *159*, 203-221.
115. Houborg, R.; McCabe, M.F. Impacts of dust aerosol and adjacency effects on the accuracy of Landsat 8 and RapidEye surface reflectances. *Remote Sens. Environ.* **2017**, *194*, 127-145.
116. Hunt, E.R.; Li, L.; Yilmaz, M.T.; Jackson, T.J. Comparison of vegetation water contents derived from shortwave-infrared and passive-microwave sensors over central Iowa. *Remote Sens. Environ.* **2011**, *115*, 2376-2383.
117. Hunt, E.R.; Wang, L.L.; Qu, J.J.; Hao, X.J. Remote sensing of fuel moisture content from canopy water indices and normalized dry matter index. *J. Appl. Remote Sens.* **2012**, *6*, 11.
118. Hunt Jr, E.R.; Doraiswamy, P.C.; McMurtrey, J.E.; Daughtry, C.S.T.; Perry, E.M.; Akhmedov, B. A visible band index for remote sensing leaf chlorophyll content at the canopy scale. *Int. J. Appl. Earth Obs. Geoinf.* **2013**, *21*, 103-112.
119. Inoue, Y.; Guerif, M.; Baret, F.; Skidmore, A.; Gitelson, A.; Schlerf, M.; Darvishzadeh, R.; Oliosio, A. Simple and robust methods for remote sensing of canopy chlorophyll content: a comparative analysis of hyperspectral data for different types of vegetation. *Plant Cell Environ* **2016**, *39*, 2609-2623.
120. Ishihara, M.; Inoue, Y.; Ono, K.; Shimizu, M.; Matsuura, S. The Impact of Sunlight Conditions on the Consistency of Vegetation Indices in Croplands-Effective Usage of Vegetation Indices from Continuous Ground-Based Spectral Measurements. *Remote Sens.* **2015**, *7*, 14079-14098.
121. Jacquemoud, S. Inversion of the PROSPECT + SAIL canopy reflectance model from AVIRIS equivalent spectra: Theoretical study. *Remote Sens. Environ.* **1993**, *44*, 281-292.
122. Jacquemoud, S.; Bacour, C.; Poilvé, H.; Frangi, J.P. Comparison of Four Radiative Transfer Models to Simulate Plant Canopies Reflectance: Direct and Inverse Mode. *Remote Sens. Environ.* **2000**, *74*, 471-481.
123. Jacquemoud, S.; Baret, F.; Andrieu, B.; Danson, F.M.; Jaggard, K. Extraction of vegetation biophysical parameters by inversion of the PROSPECT + SAIL models on sugar beet canopy reflectance data. Application to TM and AVIRIS sensors. *Remote Sens. Environ.* **1995**, *52*, 163-172.
124. Jacquemoud, S.; Verhoef, W.; Baret, F.; Bacour, C.; Zarco-Tejada, P.J.; Asner, G.P.; François, C.; Ustin, S.L. PROSPECT + SAIL models: A review of use for vegetation characterization. *Remote Sens. Environ.* **2009**, *113*, Supplement 1, S56-S66.
125. Jarlan, L.; Mangiarotti, S.; Mougou, E.; Mazzega, P.; Hiernaux, P.; Le Dantec, V. Assimilation of SPOT/VEGETATION NDVI data into a sahelian vegetation dynamics model. *Remote Sens. Environ.* **2008**, *112*, 1381-1394.
126. Jay, S.; Maupas, F.; Bendoula, R.; Gorretta, N. Retrieving LAI, chlorophyll and nitrogen contents in sugar beet crops from multi-angular optical remote sensing: Comparison of vegetation indices and PROSAIL inversion for field phenotyping. *Field Crops Res.* **2017**, *210*, 33-46.
127. Jia, K.; Liang, S.; Gu, X.; Baret, F.; Wei, X.; Wang, X.; Yao, Y.; Yang, L.; Li, Y. Fractional vegetation cover estimation algorithm for Chinese GF-1 wide field view data. *Remote Sens. Environ.* **2016**, *177*, 184-191.
128. Jiao, Q.J.; Zhang, B.; Liu, J.G.; Liu, L.Y. A novel two-step method for winter wheat-leaf chlorophyll content estimation using a hyperspectral vegetation index. *Int. J. Remote Sens.* **2014**, *35*, 7363-7375.
129. Jin, H.; Eklundh, L. A physically based vegetation index for improved monitoring of plant phenology. *Remote Sens. Environ.* **2014**, *152*, 512-525.
130. Jin, X.L.; Li, Z.H.; Feng, H.K.; Xu, X.G.; Yang, G.J. Newly Combined Spectral Indices to Improve Estimation of Total Leaf Chlorophyll Content in Cotton. *Ieee J-Stars* **2014**, *7*, 4589-4600.

131. Kallel, A.; Le Hégarat-Masclé, S.; Ottlé, C.; Hubert-Moy, L. Determination of vegetation cover fraction by inversion of a four-parameter model based on isoline parametrization. *Remote Sens. Environ.* **2007**, *111*, 553-566.
132. Kattenborn, T.; Fassnacht, F.E.; Pierce, S.; Lopatin, J.; Grime, J.P.; Schmidtlein, S. Linking plant strategies and plant traits derived by radiative transfer modelling. *J. Veg. Sci.* **2017**, *28*, 717-727.
133. Koetz, B.; Baret, F.; Poilvé, H.; Hill, J. Use of coupled canopy structure dynamic and radiative transfer models to estimate biophysical canopy characteristics. *Remote Sens. Environ.* **2005**, *95*, 115-124.
134. Kong, W.P.; Huang, W.J.; Zhou, X.F.; Song, X.Y.; Casa, R. Estimation of carotenoid content at the canopy scale using the carotenoid triangle ratio index from in situ and simulated hyperspectral data. *J. Appl. Remote Sens.* **2016**, *10*.
135. Kooistra, L.; Clevers, J. Estimating potato leaf chlorophyll content using ratio vegetation indices. *Remote Sens. Lett.* **2016**, *7*, 611-620.
136. Kushida, K. Global remote sensing of water-chlorophyll ratio in terrestrial plant leaves. *Ecol. Evol.* **2012**, *2*, 2544-2551.
137. Kushida, K.; Yoshino, K. Estimation of LAI and FAPAR by constraining the leaf and soil spectral characteristics in a radiative transfer model. *Int. J. Remote Sens.* **2010**, *31*, 2351-2375.
138. Lauvernet, C.; Baret, F.; Hascoët, L.; Buis, S.; Le Dimet, F.-X. Multitemporal-patch ensemble inversion of coupled surface-atmosphere radiative transfer models for land surface characterization. *Remote Sens. Environ.* **2008**, *112*, 851-861.
139. le Maire, G.; François, C.; Soudani, K.; Berveiller, D.; Pontailier, J.-Y.; Bréda, N.; Genet, H.; Davi, H.; Dufrêne, E. Calibration and validation of hyperspectral indices for the estimation of broadleaved forest leaf chlorophyll content, leaf mass per area, leaf area index and leaf canopy biomass. *Remote Sens. Environ.* **2008**, *112*, 3846-3864.
140. le Maire, G.; Marsden, C.; Nouvellon, Y.; Stape, J.L.; Ponzoni, F.J. Calibration of a Species-Specific Spectral Vegetation Index for Leaf Area Index (LAI) Monitoring: Example with MODIS Reflectance Time-Series on Eucalyptus Plantations. *Remote Sens.* **2012**, *4*, 3766-3780.
141. Lehnert, L.W.; Meyer, H.; Meyer, N.; Reudenbach, C.; Bendix, J. A hyperspectral indicator system for rangeland degradation on the Tibetan Plateau: A case study towards spaceborne monitoring. *Ecol. Indicators* **2014**, *39*, 54-64.
142. Li, H.; Chen, Z.X.; Jiang, Z.W.; Wu, W.B.; Ren, J.Q.; Liu, B.; Hasi, T. Comparative analysis of GF-1, HJ-1, and Landsat-8 data for estimating the leaf area index of winter wheat. *J. Integr. Agric.* **2017**, *16*, 266-285.
143. Li, L.; Cheng, Y.B.; Ustin, S.; Hu, X.T.; Riano, D. Retrieval of vegetation equivalent water thickness from reflectance using genetic algorithm (GA)-partial least squares (PLS) regression. *Adv. Space Res.* **2008**, *41*, 1755-1763.
144. Li, L.; Gu, X.F.; Ye, Z.T.; Yu, T.; Qiao, Y.L.; Meng, Q.Y.; Wang, Y.X. Characteristic difference analysis and transfer parameter determination for different satellites to detect NDVI values. *Science China-Earth Sciences* **2012**, *55*, 816-823.
145. Li, Q.M.; Hu, B.X.; Pattey, E. A scale-wise model inversion method to retrieve canopy biophysical parameters from hyperspectral remote sensing data. *Can. J. Remote Sens.* **2008**, *34*, 311-319.
146. Li, R.; Li, C.-j.; Dong, Y.-y.; Liu, F.; Wang, J.-h.; Yang, X.-d.; Pan, Y.-c. Assimilation of Remote Sensing and Crop Model for LAI Estimation Based on Ensemble Kalman Filter. *Agr. Sci. China* **2011**, *10*, 1595-1602.
147. Li, S.M.; Li, H.; Sun, D.F.; Zhou, L.D. Estimation of Regional Leaf Area Index by Remote Sensing Inversion of PROSAIL Canopy Spectral Model. *Spectrosc. Spect. Anal.* **2009**, *29*, 2725-2729.
148. Li, W.J.; Weiss, M.; Waldner, F.; Defourny, P.; Demarez, V.; Morin, D.; Hagolle, O.; Baret, F. A Generic Algorithm to Estimate LAI, FAPAR and FCOVER Variables from SPOT4_HRVIR and Landsat Sensors: Evaluation of the Consistency and Comparison with Ground Measurements. *Remote Sens.* **2015**, *7*, 15494-15516.
149. Li, X.C.; Bao, Y.S.; Xu, X.G.; Jin, X.L.; Zhang, J.C.; Song, X.Y. New Vegetation Index Fusing Visible-Infrared and Shortwave Infrared Spectral Feature for Winter Wheat LAI Retrieval. *Spectrosc. Spect. Anal.* **2013**, *33*, 2398-2402.
150. Li, X.J.; Mao, F.J.; Du, H.Q.; Zhou, G.M.; Xu, X.J.; Han, N.; Sun, S.B.; Gao, G.L.; Chen, L. Assimilating leaf area index of three typical types of subtropical forest in China from MODIS time series data based on the integrated ensemble Kalman filter and PROSAIL model. *Isprs J Photogramm* **2017**, *126*, 68-78.
151. Li, Z.H.; Jin, X.L.; Wang, J.H.; Yang, G.J.; Nie, C.W.; Xu, X.G.; Feng, H.K. Estimating winter wheat (*Triticum aestivum*) LAI and leaf chlorophyll content from canopy reflectance data by integrating agronomic prior knowledge with the PROSAIL model. *Int. J. Remote Sens.* **2015**, *36*, 2634-2653.

152. Liang, L.; Di, L.; Zhang, L.; Deng, M.; Qin, Z.; Zhao, S.; Lin, H. Estimation of crop LAI using hyperspectral vegetation indices and a hybrid inversion method. *Remote Sens. Environ.* **2015**, *165*, 123-134.
153. Liang, L.; Qin, Z.H.; Zhao, S.H.; Di, L.P.; Zhang, C.; Deng, M.X.; Lin, H.; Zhang, L.P.; Wang, L.J.; Liu, Z.X. Estimating crop chlorophyll content with hyperspectral vegetation indices and the hybrid inversion method. *Int. J. Remote Sens.* **2016**, *37*, 2923-2949.
154. Liu, F.; Liu, X.; Ding, C.; Wu, L. The dynamic simulation of rice growth parameters under cadmium stress with the assimilation of multi-period spectral indices and crop model. *Field Crops Res.* **2015**, *183*, 225-234.
155. Liu, J.; Pattey, E.; Jégo, G. Assessment of vegetation indices for regional crop green LAI estimation from Landsat images over multiple growing seasons. *Remote Sens. Environ.* **2012**, *123*, 347-358.
156. Liu, K.; Zhou, Q.-b.; Wu, W.-b.; Xia, T.; Tang, H.-j. Estimating the crop leaf area index using hyperspectral remote sensing. *J. Integr. Agric.* **2016**, *15*, 475-491.
157. Liu, Z.Y.; Ma, L.L.; Tang, L.L.; Qian, Y.G. LAI retrieval based on PROSPECT-SAILH model from multi-angular data of WiDAS imaging system. In *Advances in Environmental Science and Engineering, Pts 1-6*, Iranpour, R.; Zhao, J.; Wang, A.; Yang, F.L.; Li, X., Eds. 2012; Vol. 518-523, pp 5697-5703.
158. Lo Seen, D.; Mougin, E.; Rambal, S.; Gaston, A.; Hiernaux, P. A regional Sahelian grassland model to be coupled with multispectral satellite data. II: Toward the control of its simulations by remotely sensed indices. *Remote Sens. Environ.* **1995**, *52*, 194-206.
159. Locherer, M.; Hank, T.; Danner, M.; Mauser, W. Retrieval of Seasonal Leaf Area Index from Simulated EnMAP Data through Optimized LUT-Based Inversion of the PROSAIL Model. *Remote Sens.* **2015**, *7*, 10321-10346.
160. Ma, H.; Liang, S.; Xiao, Z.; Shi, H. Simultaneous inversion of multiple land surface parameters from MODIS optical-thermal observations. *Isprs J Photogramm* **2017**, *128*, 240-254.
161. Machwitz, M.; Giustarini, L.; Bossung, C.; Frantz, D.; Schlerf, M.; Lilienthal, H.; Wandera, L.; Matgen, P.; Hoffmann, L.; Udelhoven, T. Enhanced biomass prediction by assimilating satellite data into a crop growth model. *Environ. Model. Software* **2014**, *62*, 437-453.
162. Maffei, C.; Menenti, M. A MODIS-based perpendicular moisture index to retrieve leaf moisture content of forest canopies. *Int. J. Remote Sens.* **2014**, *35*, 1829-1845.
163. Mao, F.; Du, H.; Zhou, G.; Li, X.; Xu, X.; Li, P.; Sun, S. Coupled LAI assimilation and BEPS model for analyzing the spatiotemporal pattern and heterogeneity of carbon fluxes of the bamboo forest in Zhejiang Province, China. *Agric. For. Meteorol* **2017**, *242*, 96-108.
164. Martínez, B.; Camacho, F.; Verger, A.; García-Haro, F.J.; Gilabert, M.A. Intercomparison and quality assessment of MERIS, MODIS and SEVIRI FAPAR products over the Iberian Peninsula. *Int. J. Appl. Earth Obs. Geoinf.* **2013**, *21*, 463-476.
165. Meng, Q.Y.; Dong, H.; Qin, Q.M.; Wang, J.L.; Zhao, J.H. MTCARI: A Kind of Vegetation Index Monitoring Vegetation Leaf Chlorophyll Content Based on Hyperspectral Remote Sensing. *Spectrosc. Spect. Anal.* **2012**, *32*, 2218-2222.
166. Meng, Q.Y.; Wang, C.M.; Gu, X.F.; Sun, Y.X.; Zhang, Y.; Vatsava, R.; Jancso, T. Hot dark spot index method based on multi-angular remote sensing for leaf area index retrieval. *Environ. Earth Sci.* **2016**, *75*.
167. Meng, Q.Y.; Xie, Q.X.; Wang, C.M.; Ma, J.X.; Sun, Y.X.; Zhang, L.L. A fusion approach of the improved Dubois model and best canopy water retrieval models to retrieve soil moisture through all maize growth stages from Radarsat-2 and Landsat-8 data. *Environ. Earth Sci.* **2016**, *75*.
168. Meroni, M.; Colombo, R.; Panigada, C. Inversion of a radiative transfer model with hyperspectral observations for LAI mapping in poplar plantations. *Remote Sens. Environ.* **2004**, *92*, 195-206.
169. Moorthy, I.; Miller, J.R.; Noland, T.L. Estimating chlorophyll concentration in conifer needles with hyperspectral data: An assessment at the needle and canopy level. *Remote Sens. Environ.* **2008**, *112*, 2824-2838.
170. Mridha, N.; Sahoo, R.N.; Sehgal, V.K.; Krishna, G.; Pargal, S.; Pradhan, S.; Gupta, V.K.; Kumar, D.N. Comparative evaluation of inversion approaches of the radiative transfer model for estimation of crop biophysical parameters. *Int. Agrophys.* **2015**, *29*, 201-212.
171. Nandibewoor, A.; Hebbal, S.B.; Hegadi, R. Remote Monitoring of Maize Crop through Satellite Multispectral Imagery. *Procedia Comput. Sci.* **2015**, *45*, 344-353.
172. Nigam, R.; Bhattacharya, B.K.; Vyas, S.; Oza, M.P. Retrieval of wheat leaf area index from AWiFS multispectral data using canopy radiative transfer simulation. *Int. J. Appl. Earth Obs. Geoinf.* **2014**, *32*, 173-185.

173. Nigam, R.; Vyas, S.S.; Bhattacharya, B.K.; Oza, M.P.; Manjunath, K.R. Retrieval of regional LAI over agricultural land from an Indian geostationary satellite and its application for crop yield estimation. *J. Spat. Sci.* **2017**, *62*, 103-125.
174. Obata, K.; Miura, T.; Yoshioka, H.; Huete, A.R. Derivation of a MODIS-compatible enhanced vegetation index from visible infrared imaging radiometer suite spectral reflectances using vegetation isoline equations. *J. Appl. Remote Sens.* **2013**, *7*.
175. Panigada, C.; Rossini, M.; Busetto, L.; Meroni, M.; Fava, F.; Colombo, R. Chlorophyll concentration mapping with MIVIS data to assess crown discoloration in the Ticino Park oak forest. *Int. J. Remote Sens.* **2010**, *31*, 3307-3332.
176. Pasolli, L.; Asam, S.; Castelli, M.; Bruzzone, L.; Wohlfahrt, G.; Zebisch, M.; Notarnicola, C. Retrieval of Leaf Area Index in mountain grasslands in the Alps from MODIS satellite imagery. *Remote Sens. Environ.* **2015**, *165*, 159-174.
177. Paz-Pellat, F.; Palacios-Velez, E.; Mejia-Saenz, E.; Martinez-Menes, M.; Palacios-Sanchez, L.A. Analysis of the spectral spaces of reflectance from crop canopies. *Agrociencia* **2005**, *39*, 293-301.
178. Pérez-Suay, A.; Amorós-López, J.; Gómez-Chova, L.; Laparra, V.; Muñoz-Marí, J.; Camps-Valls, G. Randomized kernels for large scale Earth observation applications. *Remote Sens. Environ.* **2017**, *202*, 54-63.
179. Poenaru, V.; Badea, A.; Dana Negula, I.; Moise, C. MONITORING VEGETATION PHENOLOGY IN THE BRAILA PLAIN USING SENTINEL 2 DATA. *Sci. Pap.-Ser. E-Land Reclam. Earth Obs. Surv. Environ. Eng.* **2017**, *6*, 175-180.
180. Proctor, C.; Lu, B.; He, Y.H. Determining the absorption coefficients of decay pigments in decomposing monocots. *Remote Sens. Environ.* **2017**, *199*, 137-153.
181. Qu, Y.; Wang, J.; Wan, H.; Li, X.; Zhou, G. A Bayesian network algorithm for retrieving the characterization of land surface vegetation. *Remote Sens. Environ.* **2008**, *112*, 613-622.
182. Quan, X.W.; He, B.B.; Li, X. A Bayesian Network-Based Method to Alleviate the Ill-Posed Inverse Problem: A Case Study on Leaf Area Index and Canopy Water Content Retrieval. *IEEE Trans. Geosci. Remote Sens.* **2015**, *53*, 6507-6517.
183. Quan, X.W.; He, B.B.; Li, X.; Liao, Z.M. Retrieval of Grassland Live Fuel Moisture Content by Parameterizing Radiative Transfer Model With Interval Estimated LAI. *Ieee J-Stars* **2016**, *9*, 910-920.
184. Quan, X.W.; He, B.B.; Li, X.; Tang, Z. Estimation of Grassland Live Fuel Moisture Content From Ratio of Canopy Water Content and Foliage Dry Biomass. *IEEE Geosci. Remote Sens. Lett.* **2015**, *12*, 1903-1907.
185. Quan, X.W.; He, B.B.; Yebra, M.; Yin, C.M.; Liao, Z.M.; Li, X. Retrieval of forest fuel moisture content using a coupled radiative transfer model. *Environ. Model. Software* **2017**, *95*, 290-302.
186. Quan, X.W.; He, B.B.; Yebra, M.; Yin, C.M.; Liao, Z.M.; Zhang, X.T.; Li, X. A radiative transfer model-based method for the estimation of grassland aboveground biomass. *Int. J. Appl. Earth Obs. Geoinf.* **2017**, *54*, 159-168.
187. Richter, K.; Atzberger, C.; Vuolo, F.; D'Urso, G. Evaluation of Sentinel-2 Spectral Sampling for Radiative Transfer Model Based LAI Estimation of Wheat, Sugar Beet, and Maize. *Ieee J-Stars* **2011**, *4*, 458-464.
188. Richter, K.; Atzberger, C.; Vuolo, F.; Weihs, P.; D'Urso, G. Experimental assessment of the Sentinel-2 band setting for RTM-based LAI retrieval of sugar beet and maize. *Can. J. Remote Sens.* **2009**, *35*, 230-247.
189. Richter, K.; Hank, T.B.; Vuolo, F.; Mauser, W.; D'Urso, G. Optimal Exploitation of the Sentinel-2 Spectral Capabilities for Crop Leaf Area Index Mapping. *Remote Sens.* **2012**, *4*, 561-582.
190. Richter, K.; Rischbeck, P.; Eitzinger, J.; Schneider, W.; Suppan, F.; Weihs, P. Plant growth monitoring and potential drought risk assessment by means of Earth observation data. *Int. J. Remote Sens.* **2008**, *29*, 4943-4960.
191. Richter, K.; Timmermans, W.J. Physically based retrieval of crop characteristics for improved water use estimates. *Hydrol. Earth Syst. Sci* **2009**, *13*, 663-674.
192. Richter, K.; Vuolo, F.; D'Urso, G.; Palladino, M. Evaluation of near-surface soil water status through the inversion of soil-canopy radiative transfer models in the reflective optical domain. *Int. J. Remote Sens.* **2012**, *33*, 5473-5491.
193. Rivera, J.P.; Verrelst, J.; Leonenko, G.; Moreno, J. Multiple Cost Functions and Regularization Options for Improved Retrieval of Leaf Chlorophyll Content and LAI through Inversion of the PROSAIL Model. *Remote Sens.* **2013**, *5*, 3280-3304.
194. Rivera-Caicedo, J.P.; Verrelst, J.; Muñoz-Marí, J.; Camps-Valls, G.; Moreno, J. Hyperspectral dimensionality reduction for biophysical variable statistical retrieval. *Isprs J Photogramm* **2017**, *132*, 88-101.

195. Roosjen, P.P.J.; Brede, B.; Suomalainen, J.M.; Bartholomeus, H.M.; Kooistra, L.; Clevers, J.G.P.W. Improved estimation of leaf area index and leaf chlorophyll content of a potato crop using multi-angle spectral data – potential of unmanned aerial vehicle imagery. *Int. J. Appl. Earth Obs. Geoinf.* **2018**, *66*, 14-26.
196. Salas, E.A.L.; Henebry, G.M. A New Approach for the Analysis of Hyperspectral Data: Theory and Sensitivity Analysis of the Moment Distance Method. *Remote Sens.* **2014**, *6*, 20-41.
197. Satapathy, S.; Dadhwal, V.K. PRINCIPAL COMPONENT INVERSION TECHNIQUE FOR THE RETRIEVAL OF LEAF AREA INDEX. *Photonirovachak-Journal of the Indian Society of Remote Sensing* **2005**, *33*, 323-330.
198. Sehgal, V.K.; Chakraborty, D.; Sahoo, R.N. Inversion of radiative transfer model for retrieval of wheat biophysical parameters from broadband reflectance measurements. *Information Processing in Agriculture* **2016**, *3*, 107-118.
199. Si, Y.; Schlerf, M.; Zurita-Milla, R.; Skidmore, A.; Wang, T. Mapping spatio-temporal variation of grassland quantity and quality using MERIS data and the PROSAIL model. *Remote Sens. Environ.* **2012**, *121*, 415-425.
200. Song, X.N.; Ma, J.W.; Li, X.T.; Leng, P.; Zhou, F.C.; Li, S. Estimation of Vegetation Canopy Water Content Using Hyperion Hyperspectral Data. *Spectrosc. Spect. Anal.* **2013**, *33*, 2833-2837.
201. Soudani, K.; François, C.; le Maire, G.; Le Dantec, V.; Dufrêne, E. Comparative analysis of IKONOS, SPOT, and ETM+ data for leaf area index estimation in temperate coniferous and deciduous forest stands. *Remote Sens. Environ.* **2006**, *102*, 161-175.
202. Steven, M.D. The Sensitivity of the OSAVI Vegetation Index to Observational Parameters. *Remote Sens. Environ.* **1998**, *63*, 49-60.
203. Suarez, L.; Zarco-Tejada, P.J.; Berni, J.A.J.; Gonzalez-Dugo, V.; Fereres, E. Modelling PRI for water stress detection using radiative transfer models. *Remote Sens. Environ.* **2009**, *113*, 730-744.
204. Svendsen, D.H.; Martino, L.; Campos-Taberner, M.; García-Haro, F.J.; Camps-Valls, G. Joint Gaussian Processes for Biophysical Parameter Retrieval. *IEEE Trans. Geosci. Remote Sens.* **2017**, *PP*, 1-10.
205. Taniguchi, K.; Obata, K.; Yoshioka, H. Derivation and approximation of soil isoline equations in the red-near-infrared reflectance subspace. *J. Appl. Remote Sens.* **2014**, *8*.
206. Thorp, K.R.; Gore, M.A.; Andrade-Sanchez, P.; Carmo-Silva, A.E.; Welch, S.M.; White, J.W.; French, A.N. Proximal hyperspectral sensing and data analysis approaches for field-based plant phenomics. *Comput. Electron. Agric.* **2015**, *118*, 225-236.
207. Thorp, K.R.; Wang, G.; West, A.L.; Moran, M.S.; Bronson, K.F.; White, J.W.; Mon, J. Estimating crop biophysical properties from remote sensing data by inverting linked radiative transfer and ecophysiological models. *Remote Sens. Environ.* **2012**, *124*, 224-233.
208. Tripathi, R.; Sahoo, R.N.; Sehgal, V.K.; Tomar, R.K.; Chakraborty, D.; Nagarajan, S. Inversion of PROSAIL Model for Retrieval of Plant Biophysical Parameters. *J Indian Soc. Remote* **2012**, *40*, 19-28.
209. Trombetti, M.; Riaño, D.; Rubio, M.A.; Cheng, Y.B.; Ustin, S.L. Multi-temporal vegetation canopy water content retrieval and interpretation using artificial neural networks for the continental USA. *Remote Sens. Environ.* **2008**, *112*, 203-215.
210. Ustin, S.L.; Riano, D.; Hunt, E.R. Estimating canopy water content from spectroscopy. *Isr. J. Plant Sci.* **2012**, *60*, 9-23.
211. van Leeuwen, W.J.D.; Huete, A.R. Effects of standing litter on the biophysical interpretation of plant canopies with spectral indices. *Remote Sens. Environ.* **1996**, *55*, 123-138.
212. Vane, G.; Goetz, A.F.H. Terrestrial imaging spectrometry: Current status, future trends. *Remote Sens. Environ.* **1993**, *44*, 117-126.
213. Verger, A.; Baret, F.; Camacho, F. Optimal modalities for radiative transfer-neural network estimation of canopy biophysical characteristics: Evaluation over an agricultural area with CHRIS/PROBA observations. *Remote Sens. Environ.* **2011**, *115*, 415-426.
214. Verger, A.; Baret, F.; Weiss, M. Performances of neural networks for deriving LAI estimates from existing CYCLOPES and MODIS products. *Remote Sens. Environ.* **2008**, *112*, 2789-2803.
215. Verger, A.; Camacho, F.; García-Haro, F.J.; Meliá, J. Prototyping of Land-SAF leaf area index algorithm with VEGETATION and MODIS data over Europe. *Remote Sens. Environ.* **2009**, *113*, 2285-2297.
216. Verger, A.; Vigneau, N.; Chéron, C.; Gilliot, J.-M.; Comar, A.; Baret, F. Green area index from an unmanned aerial system over wheat and rapeseed crops. *Remote Sens. Environ.* **2014**, *152*, 654-664.
217. Verrelst, J.; Camps-Valls, G.; Muñoz-Marí, J.; Rivera, J.P.; Veroustraete, F.; Clevers, J.G.P.W.; Moreno, J. Optical remote sensing and the retrieval of terrestrial vegetation bio-geophysical properties – A review. *Isprs J Photogramm* **2015**, *108*, 273-290.

218. Verrelst, J.; Dethier, S.; Rivera, J.P.; Munoz-Mari, J.; Camps-Valls, G.; Moreno, J. Active Learning Methods for Efficient Hybrid Biophysical Variable Retrieval. *IEEE Geosci. Remote Sens. Lett.* **2016**, *13*, 1012-1016.
219. Verrelst, J.; Rivera, J.P.; Gitelson, A.; Delegido, J.; Moreno, J.; Camps-Valls, G. Spectral band selection for vegetation properties retrieval using Gaussian processes regression. *Int. J. Appl. Earth Obs. Geoinf.* **2016**, *52*, 554-567.
220. Verrelst, J.; Rivera, J.P.; Leonenko, G.; Alonso, L.; Moreno, J. Optimizing LUT-Based RTM Inversion for Semiautomatic Mapping of Crop Biophysical Parameters from Sentinel-2 and-3 Data: Role of Cost Functions. *IEEE Trans. Geosci. Remote Sens.* **2013**, *52*, 257-269.
221. Verrelst, J.; Rivera, J.P.; Veroustraete, F.; Muñoz-Mari, J.; Clevers, J.G.P.W.; Camps-Valls, G.; Moreno, J. Experimental Sentinel-2 LAI estimation using parametric, non-parametric and physical retrieval methods – A comparison. *Isprs J Photogramm* **2015**, *108*, 260-272.
222. Verrelst, J.; Sabater, N.; Rivera, J.P.; Munoz-Mari, J.; Vicent, J.; Camps-Valls, G.; Moreno, J. Emulation of Leaf, Canopy and Atmosphere Radiative Transfer Models for Fast Global Sensitivity Analysis. *Remote Sens.* **2016**, *8*.
223. Vincini, M.; Amaducci, S.; Frazzi, E. Empirical Estimation of Leaf Chlorophyll Density in Winter Wheat Canopies Using Sentinel-2 Spectral Resolution. *IEEE Trans. Geosci. Remote Sens.* **2014**, *52*, 3220-3235.
224. Vincini, M.; Frazzi, E. Comparing narrow and broad-band vegetation indices to estimate leaf chlorophyll content in planophile crop canopies. *Precis. Agric.* **2011**, *12*, 334-344.
225. Vincini, M.; Frazzi, E.; D'Alessio, P.; Calegari, F. Sensitivity to leaf chlorophyll concentration of a broad-band vegetation index at the canopy scale. *Rivista Italiana Di Telerilevamento* **2009**, *41*, 59-73.
226. Vohland, M. Using imaging and non-imaging spectroradiometer data for the remote detection of vegetation water content. *J. Appl. Remote Sens.* **2008**, *2*.
227. Vohland, M.; Jarmer, T. Estimating structural and biochemical parameters for grassland from spectroradiometer data by radiative transfer modelling (PROSPECT plus SAIL). *Int. J. Remote Sens.* **2008**, *29*, 191-209.
228. Vohland, M.; Mader, S.; Dorigo, W. Applying different inversion techniques to retrieve stand variables of summer barley with PROSPECT + SAIL. *Int. J. Appl. Earth Obs. Geoinf.* **2010**, *12*, 71-80.
229. Vuolo, F.; Dash, J.; Curran, P.J.; Lajas, D.; Kwiatkowska, E. Methodologies and Uncertainties in the Use of the Terrestrial Chlorophyll Index for the Sentinel-3 Mission. *Remote Sens.* **2012**, *4*, 1112.
230. Vuolo, F.; Dini, L.; D'Urso, G. Retrieval of Leaf Area Index from CHRIS/PROBA data: an analysis of the directional and spectral information content. *Int. J. Remote Sens.* **2008**, *29*, 5063-5072.
231. Vuolo, F.; Žóltak, M.; Pipitone, C.; Zappa, L.; Wenng, H.; Immitzer, M.; Weiss, M.; Baret, F.; Atzberger, C. Data Service Platform for Sentinel-2 Surface Reflectance and Value-Added Products: System Use and Examples. *Remote Sens.* **2016**, *8*, 938.
232. Wang, L.; Hunt, J.E.R.; Qu, J.J.; Hao, X.; Daughtry, C.S.T. Towards estimation of canopy foliar biomass with spectral reflectance measurements. *Remote Sens. Environ.* **2011**, *115*, 836-840.
233. Wang, L.; Hunt Jr, E.R.; Qu, J.J.; Hao, X.; Daughtry, C.S.T. Remote sensing of fuel moisture content from ratios of narrow-band vegetation water and dry-matter indices. *Remote Sens. Environ.* **2013**, *129*, 103-110.
234. Wang, L.; Yang, R.R.; Tian, Q.J.; Yang, Y.J.; Zhou, Y.; Sun, Y.; Mi, X.F. Comparative Analysis of GF-1 WFV, ZY-3 MUX, and HJ-1 CCD Sensor Data for Grassland Monitoring Applications. *Remote Sens.* **2015**, *7*, 2089-2108.
235. Wang, L.J.; Dong, T.F.; Zhang, G.M.; Niu, Z. LAI Retrieval Using PROSAIL Model and Optimal Angle Combination of Multi-Angular Data in Wheat. *Ieee J-Stars* **2013**, *6*, 1730-1736.
236. Wang, Q.; Li, P. Canopy vertical heterogeneity plays a critical role in reflectance simulation. *Agric. For. Meteorol* **2013**, *169*, 111-121.
237. Wang, X.X.; Jia, K.; Liang, S.L.; Li, Q.Z.; Wei, X.Q.; Yao, Y.J.; Zhang, X.T.; Tu, Y.X. Estimating Fractional Vegetation Cover From Landsat-7 ETM+ Reflectance Data Based on a Coupled Radiative Transfer and Crop Growth Model. *IEEE Trans. Geosci. Remote Sens.* **2017**, *55*, 5539-5546.
238. Wang, Y.X.; Gu, X.F.; Jean, S.; Yu, T.; Ye, Z.T.; Meng, Q.Y.; Li, L. Block effect simulation for image registration in remote sensing. *Int. J. Infrared Milli.* **2013**, *32*, 170-175.
239. Wang, Y.Y.; Li, G.C.; Zhang, L.J.; Fan, J.L. Retrieval of leaf water content of winter wheat from canopy spectral reflectance data using a position index ($\lambda(\min)$) derived from the 1200 nm absorption band. *Remote Sens. Lett.* **2011**, *2*, 31-40.
240. Wei, C.W.; Huang, J.F.; Mansaray, L.R.; Li, Z.H.; Liu, W.W.; Han, J.H. Estimation and Mapping of Winter Oilseed Rape LAI from High Spatial Resolution Satellite Data Based on a Hybrid Method. *Remote Sens.* **2017**, *9*, 16.

241. Weiss, M.; Baret, F. Evaluation of Canopy Biophysical Variable Retrieval Performances from the Accumulation of Large Swath Satellite Data. *Remote Sens. Environ.* **1999**, *70*, 293-306.
242. Weiss, M.; Baret, F.; Myneni, R.B.; Pragnere, A.; Knyazikhin, Y. Investigation of a model inversion technique to estimate canopy biophysical variables from spectral and directional reflectance data. *Agronomie* **2000**, *20*, 3-22.
243. Weiss, M.; Troufleau, D.; Baret, F.; Chauki, H.; Prévot, L.; Olioso, A.; Bruguier, N.; Brisson, N. Coupling canopy functioning and radiative transfer models for remote sensing data assimilation. *Agric. For. Meteorol* **2001**, *108*, 113-128.
244. Weyermann, J.; Damm, A.; Kneubuhler, M.; Schaepman, M.E. Correction of Reflectance Anisotropy Effects of Vegetation on Airborne Spectroscopy Data and Derived Products. *IEEE Trans. Geosci. Remote Sens.* **2014**, *52*, 616-627.
245. Wingate, L.; Ogee, J.; Cremonese, E.; Filippa, G.; Mizunuma, T.; Migliavacca, M.; Moisy, C.; Wilkinson, M.; Moureaux, C.; Wohlfahrt, G., et al. Interpreting canopy development and physiology using a European phenology camera network at flux sites. *Biogeosciences* **2015**, *12*, 5995-6015.
246. Wu, C.; Niu, Z.; Tang, Q.; Huang, W. Estimating chlorophyll content from hyperspectral vegetation indices: Modeling and validation. *Agric. For. Meteorol* **2008**, *148*, 1230-1241.
247. Wu, L.; Liu, X.; Wang, P.; Zhou, B.; Liu, M.; Li, X. The assimilation of spectral sensing and the WOFOST model for the dynamic simulation of cadmium accumulation in rice tissues. *Int. J. Appl. Earth Obs. Geoinf.* **2013**, *25*, 66-75.
248. Xu, B.D.; Li, J.; Liu, Q.H.; Huete, A.R.; Yu, Q.; Zeng, Y.L.; Yin, G.F.; Zhao, J.; Yang, L. Evaluating Spatial Representativeness of Station Observations for Remotely Sensed Leaf Area Index Products. *Ieee J-Stars* **2016**, *9*, 3267-3282.
249. Yang, F.; Sun, J.L.; Fang, H.L.; Yao, Z.F.; Zhang, J.H.; Zhu, Y.Q.; Song, K.S.; Wang, Z.M.; Hu, M.G. Comparison of different methods for corn LAI estimation over northeastern China. *Int. J. Appl. Earth Obs. Geoinf.* **2012**, *18*, 462-471.
250. Yang, L.Q.; Jia, K.; Liang, S.L.; Wei, X.Q.; Yao, Y.J.; Zhang, X.T. A Robust Algorithm for Estimating Surface Fractional Vegetation Cover from Landsat Data. *Remote Sens.* **2017**, *9*, 20.
251. Yang, X.G.; Fan, W.Y.; Yu, Y. Estimation of Forest Canopy Chlorophyll Content Based on PROSPECT and SAIL Models. *Spectrosc. Spect. Anal.* **2010**, *30*, 3022-3026.
252. Yebra, M.; Chuvieco, E.; Riaño, D. Estimation of live fuel moisture content from MODIS images for fire risk assessment. *Agric. For. Meteorol* **2008**, *148*, 523-536.
253. Yebra, M.; Dennison, P.E.; Chuvieco, E.; Riaño, D.; Zylstra, P.; Hunt Jr, E.R.; Danson, F.M.; Qi, Y.; Jurdao, S. A global review of remote sensing of live fuel moisture content for fire danger assessment: Moving towards operational products. *Remote Sens. Environ.* **2013**, *136*, 455-468.
254. Yi, Q.; Wang, F.; Bao, A.; Jiapaer, G. Leaf and canopy water content estimation in cotton using hyperspectral indices and radiative transfer models. *Int. J. Appl. Earth Obs. Geoinf.* **2014**, *33*, 67-75.
255. Yin, C.M.; He, B.B.; Quan, X.W.; Liao, Z.M. Chlorophyll content estimation in arid grasslands from Landsat-8 OLI data. *Int. J. Remote Sens.* **2016**, *37*, 615-632.
256. Yin, G.; Li, J.; Liu, Q.; Fan, W.; Xu, B.; Zeng, Y.; Zhao, J. Regional Leaf Area Index Retrieval Based on Remote Sensing: The Role of Radiative Transfer Model Selection. *Remote Sens.* **2015**, *7*, 4604.
257. You, D.Q.; Wen, J.G.; Liu, Q.; Liu, Q.H.; Tang, Y. The Angular and Spectral Kernel-Driven Model: Assessment and Application. *Ieee J-Stars* **2014**, *7*, 1331-1345.
258. Yu, F.; Zhao, Y.S. A new semi-empirical model for soil moisture content retrieval by ASAR and TM data in vegetation-covered areas. *Science China-Earth Sciences* **2011**, *54*, 1955-1964.
259. Yu, F.H.; Xu, T.Y.; Du, W.; Ma, H.; Zhang, G.S.; Chen, C.L. Radiative transfer models (RTMs) for field phenotyping inversion of rice based on UAV hyperspectral remote sensing. *Int. J. Agric. Biol. Eng.* **2017**, *10*, 150-157.
260. Yu, K.; Lenz-Wiedemann, V.; Chen, X.; Bareth, G. Estimating leaf chlorophyll of barley at different growth stages using spectral indices to reduce soil background and canopy structure effects. *Isprs J Photogram* **2014**, *97*, 58-77.
261. Yuping, M.; Shili, W.; Li, Z.; Yingyu, H.; Liwei, Z.; Yanbo, H.; Futang, W. Monitoring winter wheat growth in North China by combining a crop model and remote sensing data. *Int. J. Appl. Earth Obs. Geoinf.* **2008**, *10*, 426-437.
262. Zarco-Tejada, P.J.; González-Dugo, V.; Williams, L.E.; Suárez, L.; Berni, J.A.J.; Goldhamer, D.; Fereres, E. A PRI-based water stress index combining structural and chlorophyll effects: Assessment using diurnal narrow-band airborne imagery and the CWSI thermal index. *Remote Sens. Environ.* **2013**, *138*, 38-50.

263. Zarco-Tejada, P.J.; Guillén-Climent, M.L.; Hernández-Clemente, R.; Catalina, A.; González, M.R.; Martín, P. Estimating leaf carotenoid content in vineyards using high resolution hyperspectral imagery acquired from an unmanned aerial vehicle (UAV). *Agric. For. Meteorol* **2013**, *171–172*, 281-294.
264. Zarco-Tejada, P.J.; Miller, J.R.; Morales, A.; Berjon, A.; Aguera, J. Hyperspectral indices and model simulation for chlorophyll estimation in open-canopy tree crops. *Remote Sens. Environ.* **2004**, *90*, 463-476.
265. Zarco-Tejada, P.J.; Rueda, C.A.; Ustin, S.L. Water content estimation in vegetation with MODIS reflectance data and model inversion methods. *Remote Sens. Environ.* **2003**, *85*, 109-124.
266. Zeng, Y.L.; Li, J.; Liu, Q.H.; Qu, Y.H.; Huete, A.R.; Xu, B.D.; Yin, G.F.; Zhao, J. An Optimal Sampling Design for Observing and Validating Long-Term Leaf Area Index with Temporal Variations in Spatial Heterogeneities. *Remote Sens.* **2015**, *7*, 1300-1319.
267. Zhang, K.W.; Hu, B.X.; Wang, J.G.; Pattey, E.; Smith, A.M. Improving the retrieval of the biophysical parameters of vegetation canopies using the contribution index. *Can. J. Remote Sens.* **2011**, *37*, 643-652.
268. Zhang, L.; Guo, C.L.; Zhao, L.Y.; Zhu, Y.; Cao, W.X.; Tian, Y.C.; Cheng, T.; Wang, X. Estimating wheat yield by integrating the WheatGrow and PROSAIL models. *Field Crops Res.* **2016**, *192*, 55-66.
269. Zhang, L.J.; Ma, H.Z.; Zhou, Z.B.; Ren, Z.L.; Zhu, X.B.; Sun, L. Vegetation Canopy Coverage Estimation Using Physical Models. In *Advances in Environmental Technologies, Pts 1-6*, Zhao, J.; Iranpour, R.; Li, X.; Jin, B., Eds. 2013; Vol. 726-731, pp 4709-4713.
270. Zhang, L.J.; Shao, Z.F.; Diao, C.Y. Synergistic retrieval model of forest biomass using the integration of optical and microwave remote sensing. *J. Appl. Remote Sens.* **2015**, *9*.
271. Zhang, N.; Zhao, Y.S. Estimating leaf area index by inversion of reflectance model for semiarid natural grasslands. *Sci. China Ser. D-Earth Sci.* **2009**, *52*, 66-84.
272. Zhang, Y.; Meng, Q.Y.; Wu, J.L.; Zhao, F. Study of Environmental Vegetation Index Based on Environment Satellite CCD Data and LAI Inversion. *Spectrosc. Spect. Anal.* **2011**, *31*, 2789-2793.
273. Zhao, D.; Yang, T.; An, S. Effects of crop residue cover resulting from tillage practices on LAI estimation of wheat canopies using remote sensing. *Int. J. Appl. Earth Obs. Geoinf.* **2012**, *14*, 169-177.
274. Zhao, X.A.; Wang, J.D.; Liu, S.H. MODIFIED MONITORING METHOD OF VEGETATION WATER CONTENT BASED ON COUPLED RADIATIVE TRANSFER MODEL. *Int. J. Infrared Milli.* **2010**, *29*, 185-+.
275. Zheng, X.M.; Ding, Y.L.; Zhao, K.; Jiang, T.; Li, X.F.; Zhang, S.Y.; Li, Y.Y.; Wu, L.L.; Sun, J.; Ren, J.H., et al. Estimation of Vegetation Water Content from Landsat 8 OLI Data. *Spectrosc. Spect. Anal.* **2014**, *34*, 3385-3390.
276. Zhou, G.X.; Liu, X.N.; Zhao, S.; Liu, M.; Wu, L. Estimating FAPAR of Rice Growth Period Using Radiation Transfer Model Coupled with the WOFOST Model for Analyzing Heavy Metal Stress. *Remote Sens.* **2017**, *9*, 15.
277. Zhou, H.; Wang, J.; Liang, S.; Xiao, Z. Extended Data-Based Mechanistic Method for Improving Leaf Area Index Time Series Estimation with Satellite Data. *Remote Sens.* **2017**, *9*, 533.
278. Zhou, X.; Huang, W.; Kong, W.; Ye, H.; Dong, Y.; Casa, R. Assessment of leaf carotenoids content with a new carotenoid index: Development and validation on experimental and model data. *Int. J. Appl. Earth Obs. Geoinf.* **2017**, *57*, 24-35.
279. Zou, X.; Möttus, M. Retrieving crop leaf tilt angle from imaging spectroscopy data. *Agric. For. Meteorol* **2015**, *205*, 73-82.
280. Zou, X.; Möttus, M. Sensitivity of Common Vegetation Indices to the Canopy Structure of Field Crops. *Remote Sens.* **2017**, *9*, 994.
281. Zou, X.C.; Hernandez-Clemente, R.; Tammeorg, P.; Torres, C.L.; Stoddard, F.L.; Makela, P.; Pellikka, P.; Mottus, M. Retrieval of leaf chlorophyll content in field crops using narrow-band indices: effects of leaf area index and leaf mean tilt angle. *Int. J. Remote Sens.* **2015**, *36*, 6031-6055.