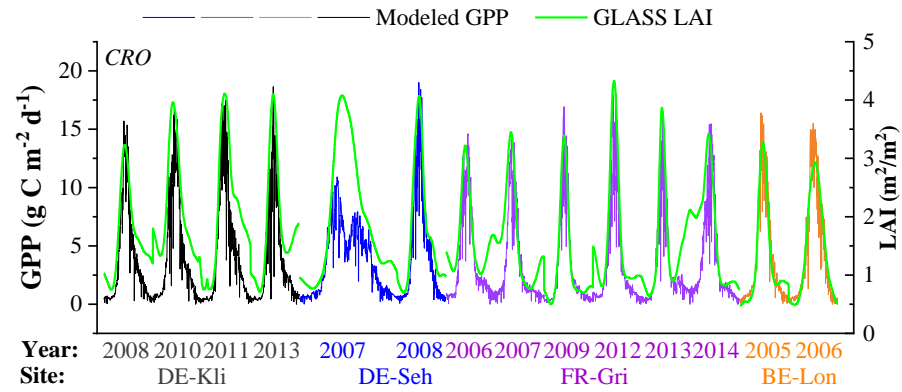
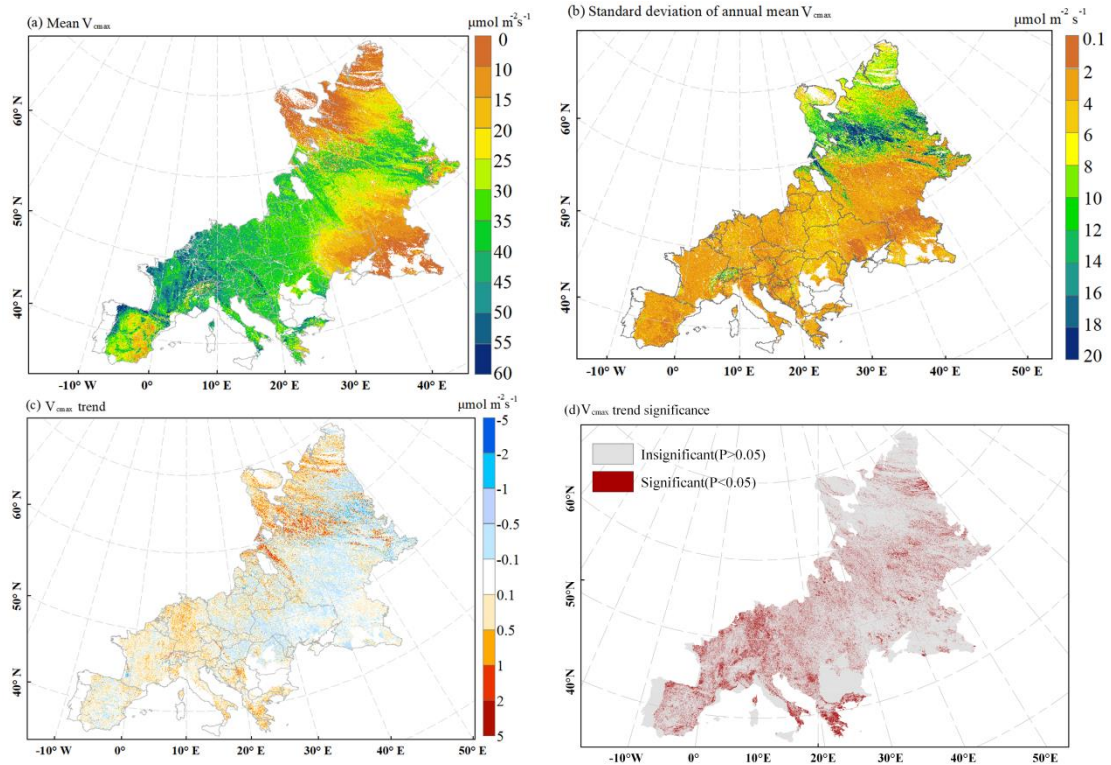


**Figure. S1.** Validation of FGM model performance at different CRO sites against EC-GPP.

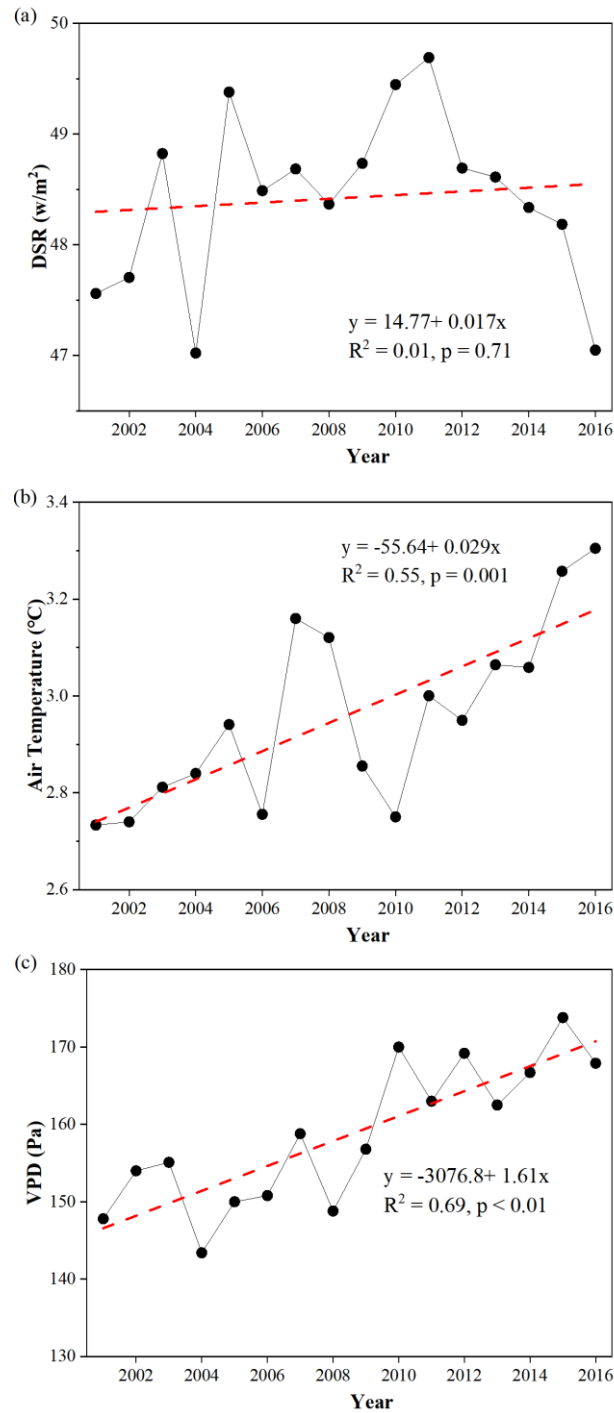


**Figure. S2.** A closer look at the LAI time series reveals that GLASS missed some of the second growing phases due to crop rotation at the BE-Lon site.



**Figure. S3.** Spatial and temporal patterns of LCC-based  $V_{\text{max}}$  from 2001 to 2016 at an 8-day interval (Lu et al. 2020). (a) shows the spatial patterns of multi-year average  $V_{\text{max}}$

maps; **(b)** shows the interannual variation of  $V_{\text{cmax}}$  represented by one standard deviation; **(c)** and **(d)** shows spatial patterns of linear trends in annual average  $V_{\text{cmax}}$  and the significance level of inter annual trend from 2001 to 2016, respectively.



**Figure. S4.** Interannual dynamics of annual mean **(a)** downward solar radiation (DSR) ( $\text{w m}^{-2}$ ), **(b)** air temperature, and **(c)** vapor pressure deficit (VPD) (Pa) during the period from 2001 to 2016.