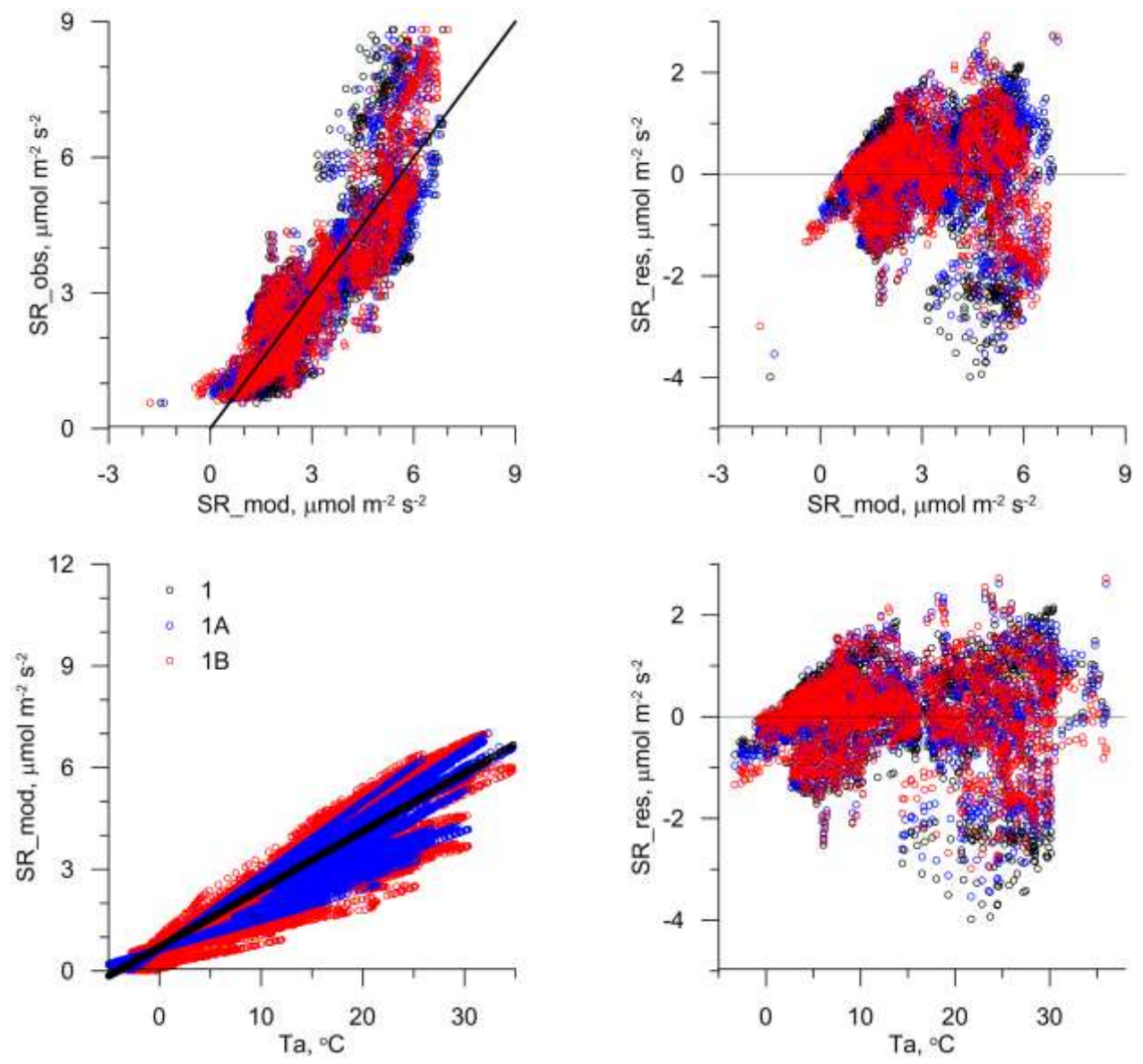
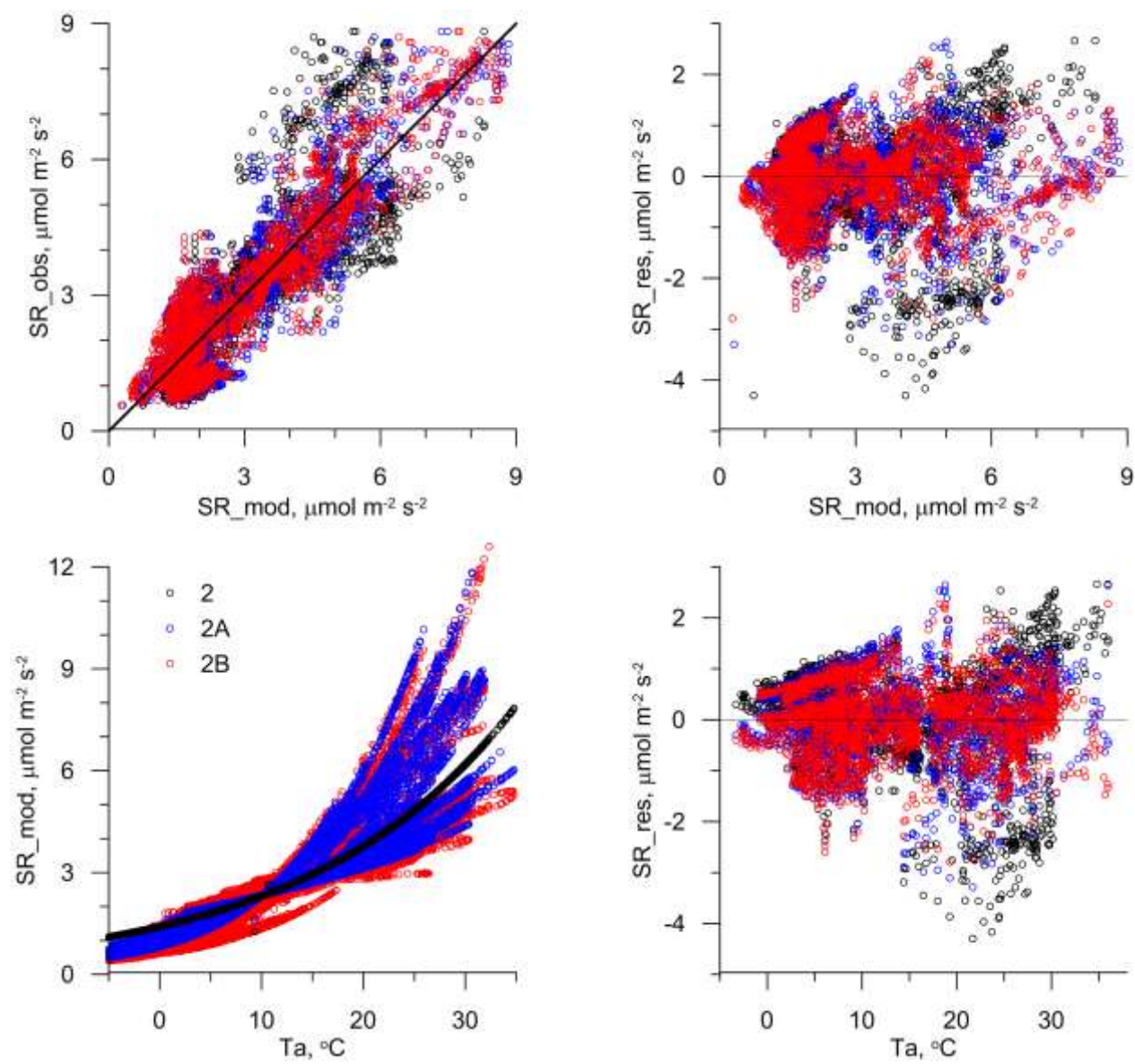


Figure S1. NSE coefficient for models modification B at various combination of governing temperatures T2 and T3. Ta – air temperature, Ts0 – surface temperature, Ts5, Ts10, etc. – soil temperature at 5, 10, etc. cm depth.

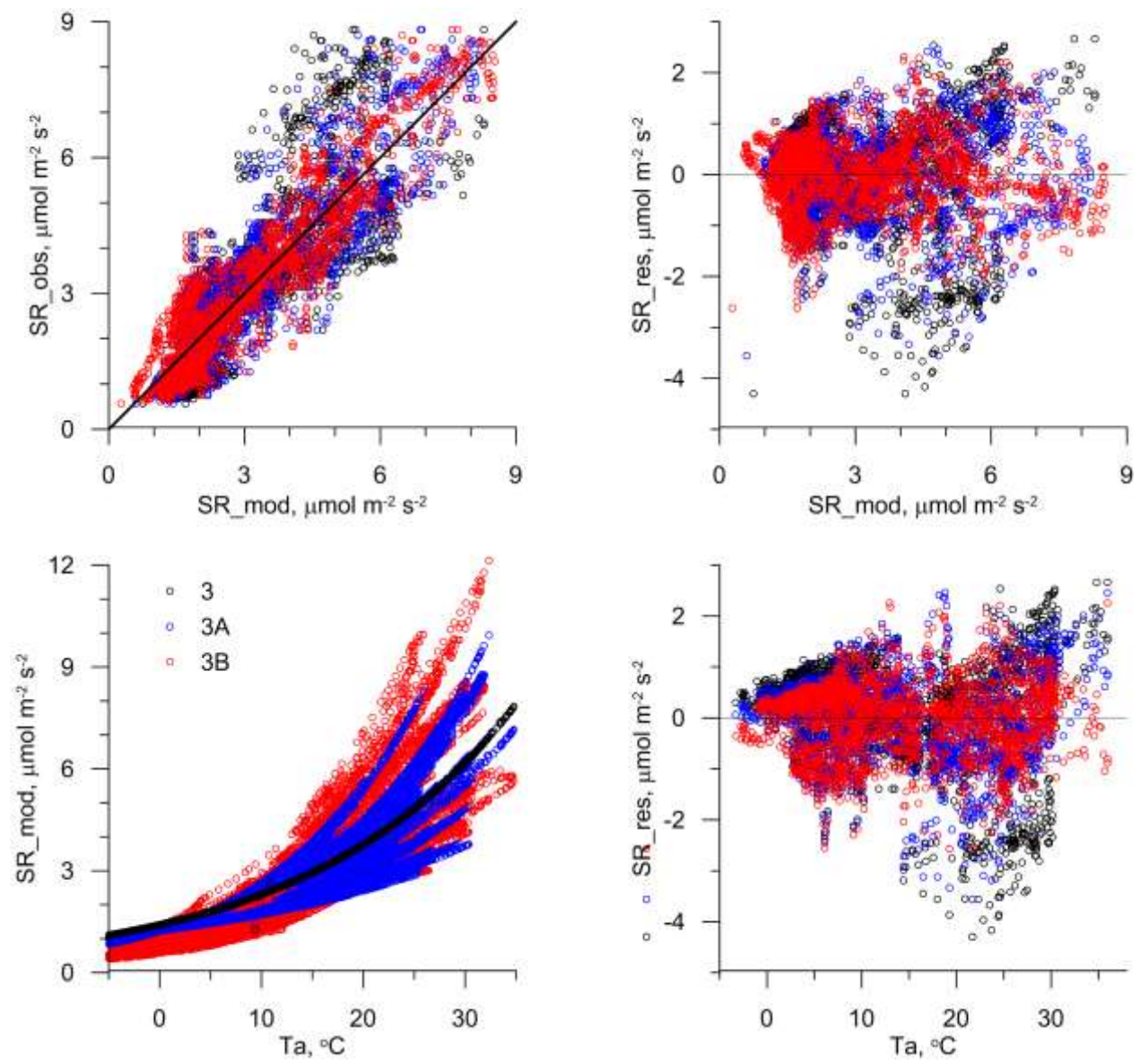
Model 1. Linear



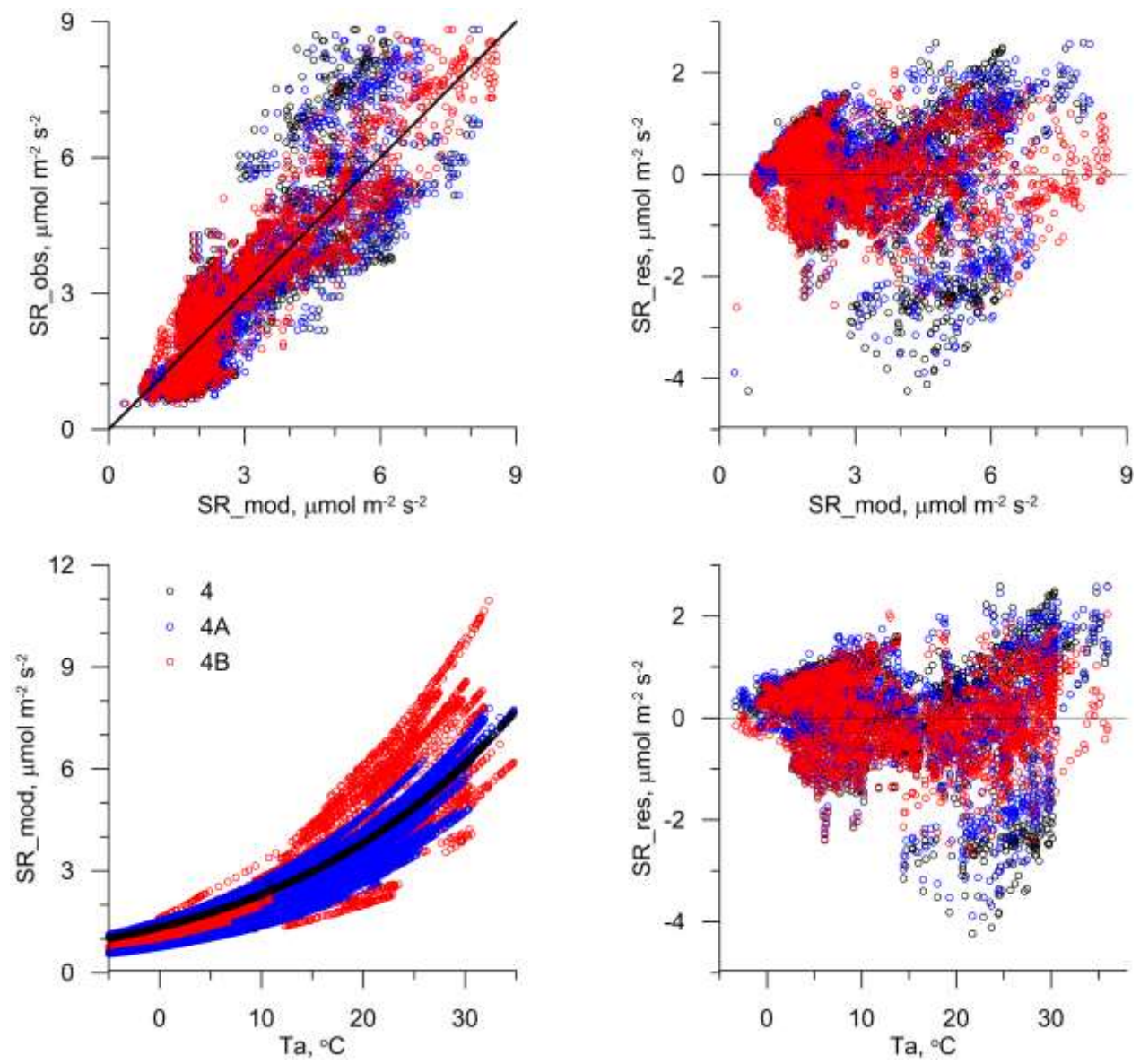
Model 2. Q10



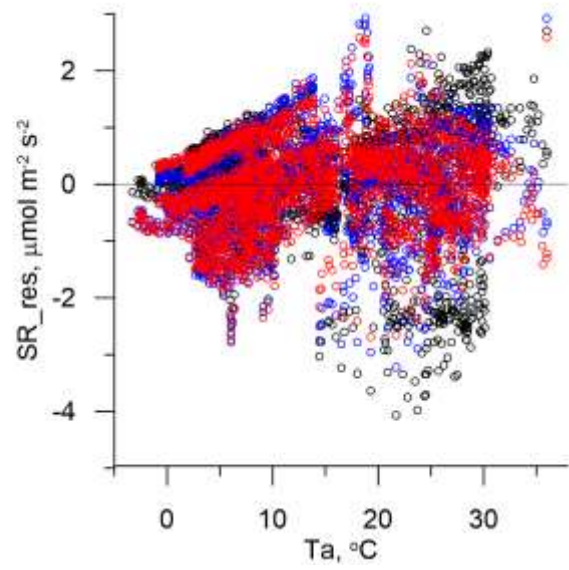
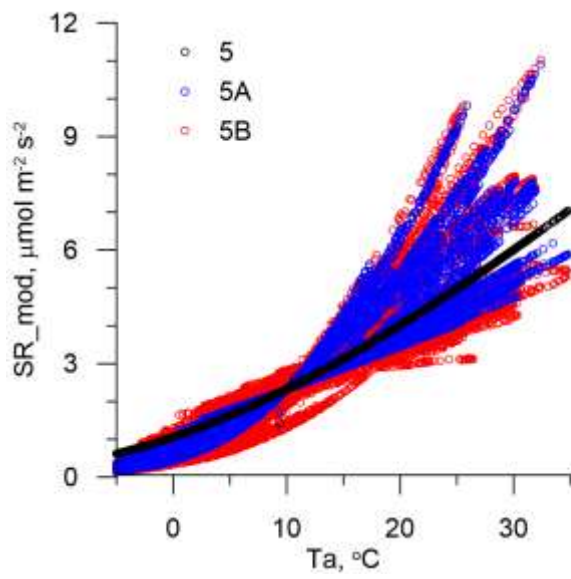
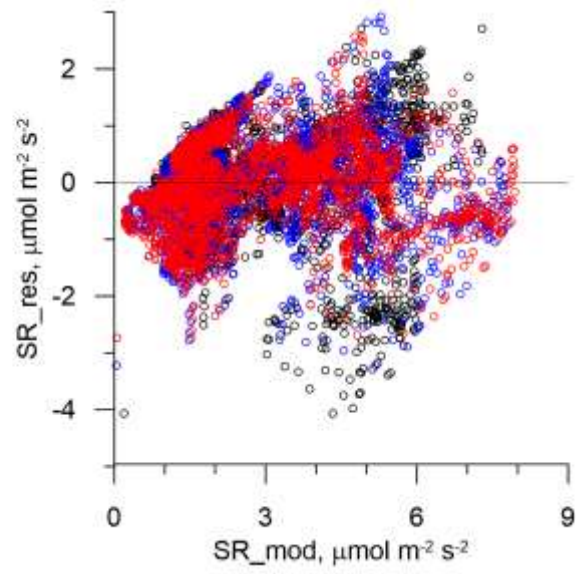
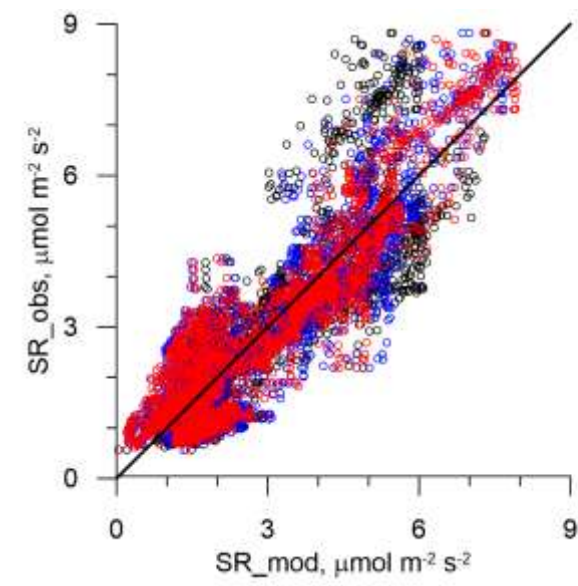
Model 3. Exponential



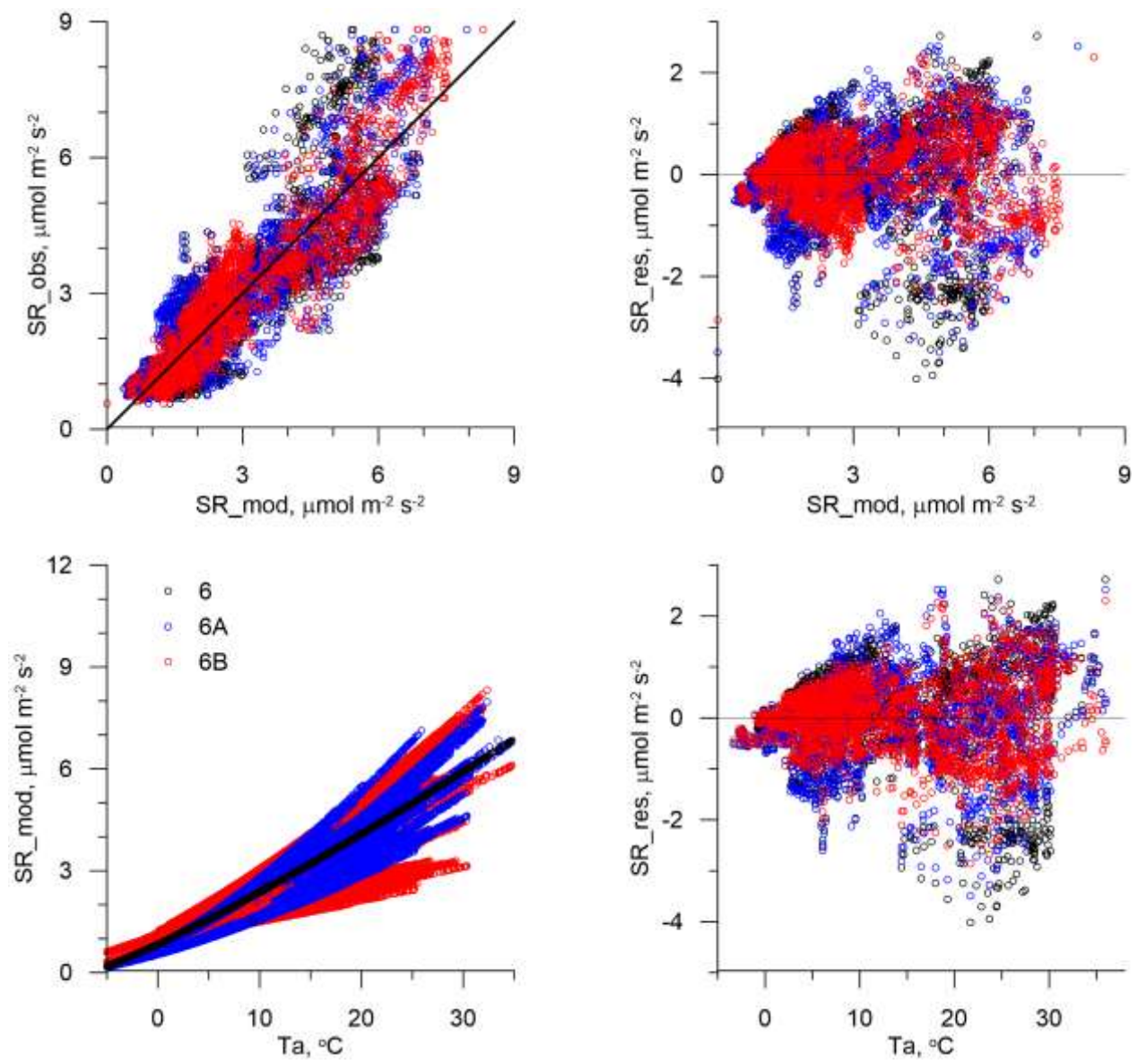
Model 4. Arrhenius



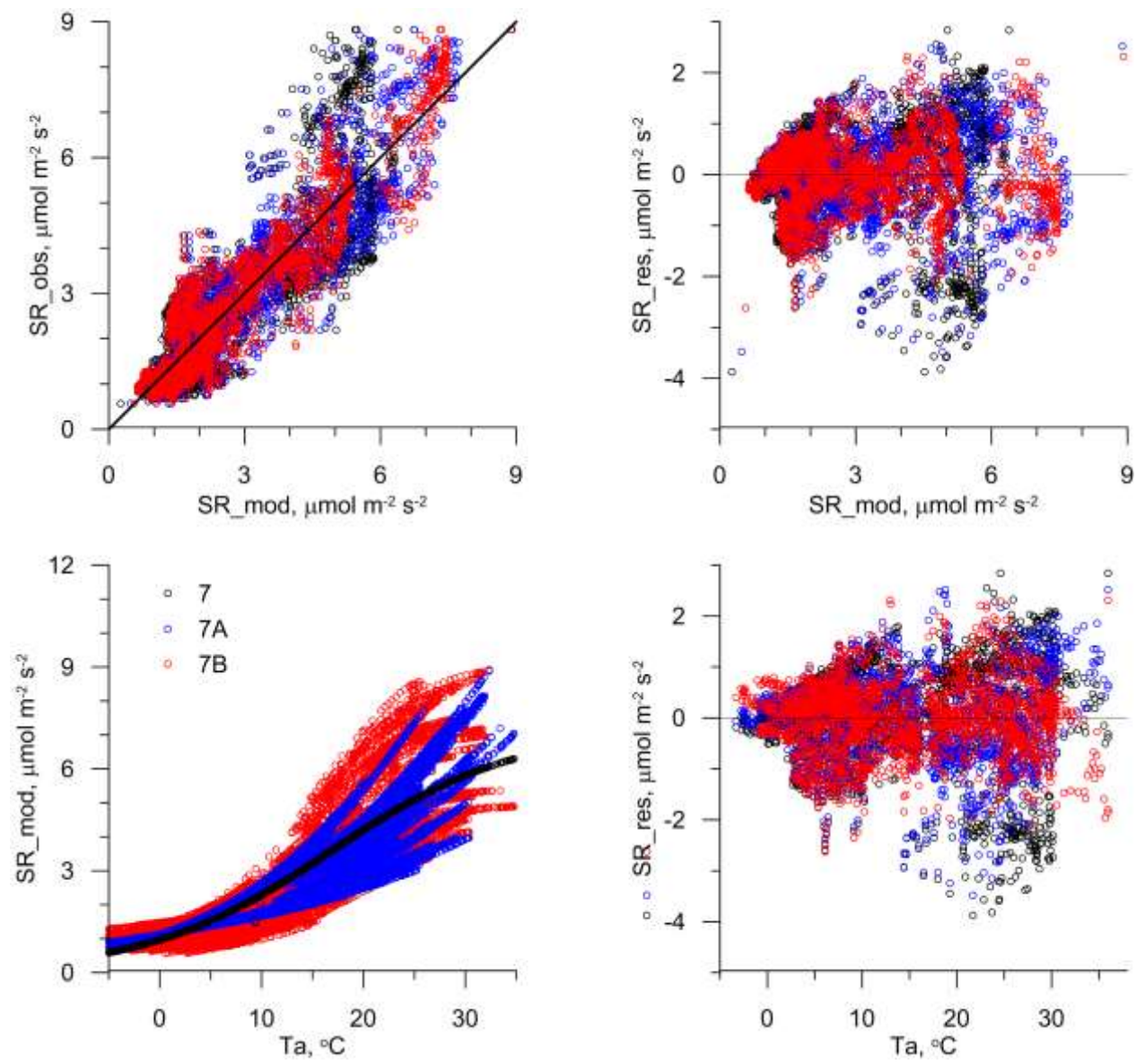
Model 5. Lloyd & Taylor



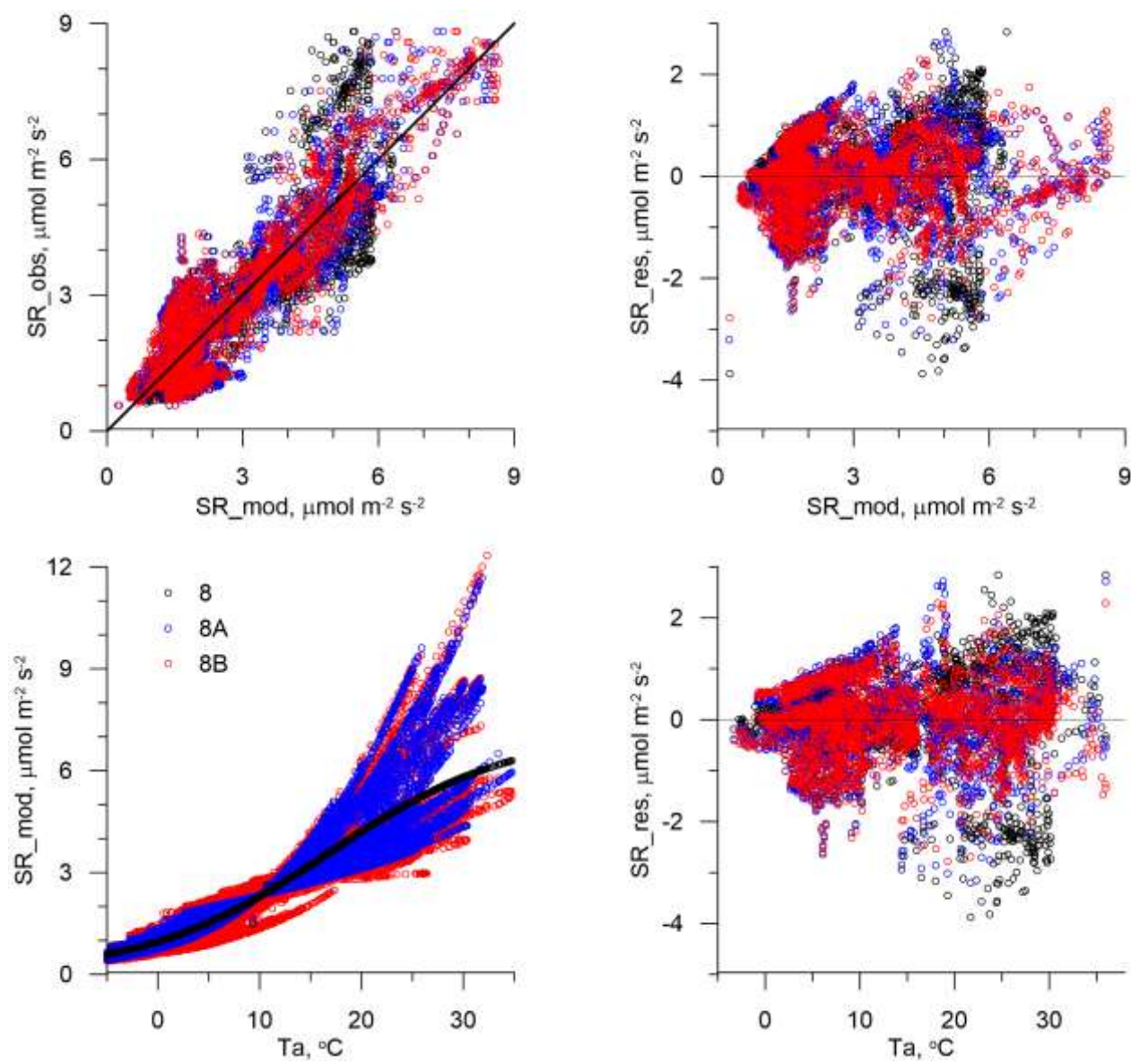
Model 6. Power



Model 7. Logistic



Model 8. Sigmoid



Model 9. Gamma

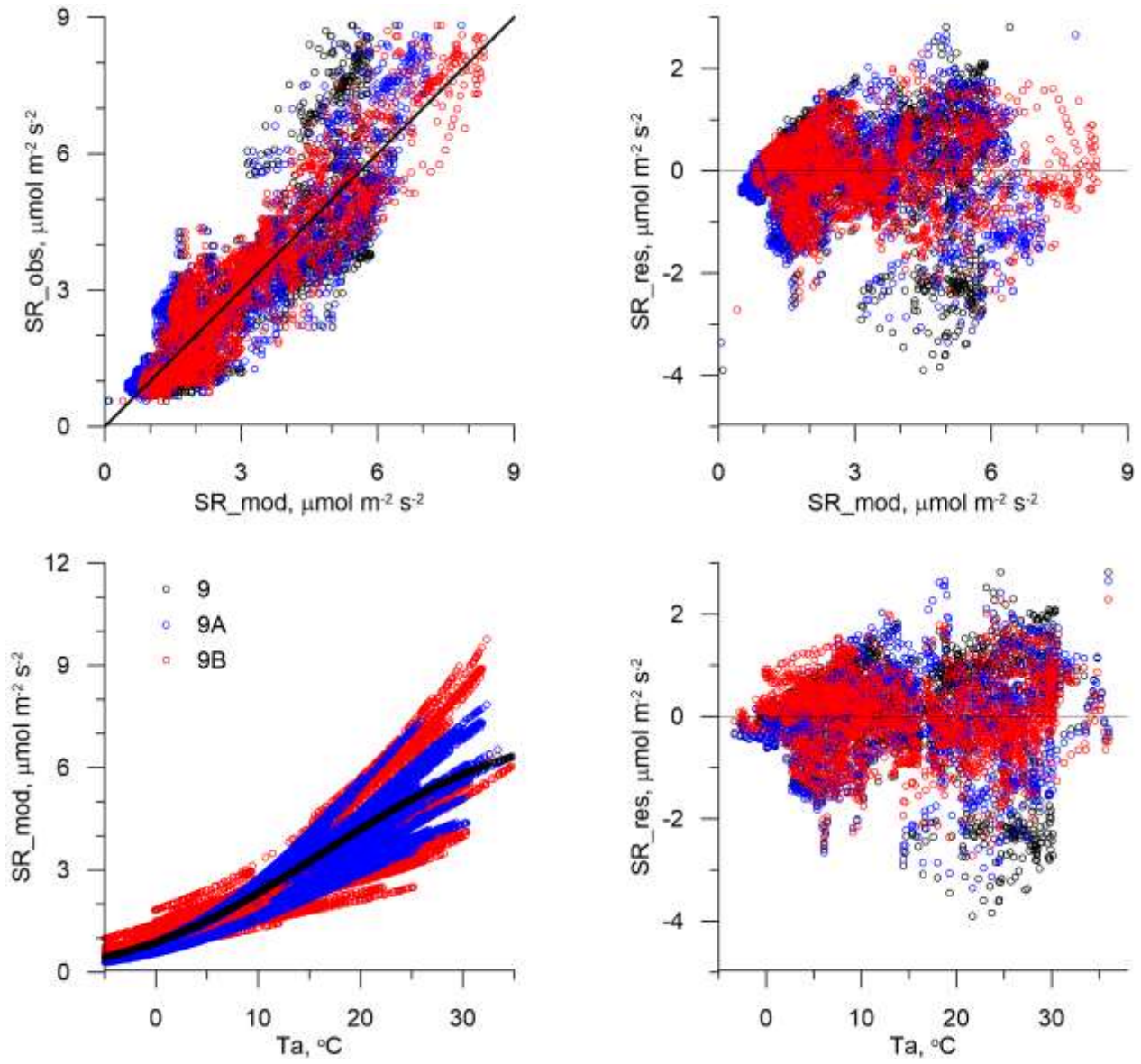


Figure S2. Relationship of observed (SR_{obs}) CO₂ soil effluxes and model residuals (SR_{res}) with modeled effluxes (SR_{mod}) and air temperatures (Ta) for base and modified models. Solid line is 1:1-line at panel a and zero line at panels b, d.