Article, supplementary material

Cold bias of ERA5 summertime daily maximum land surface temperature over Iberian Peninsula

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Supplementary material

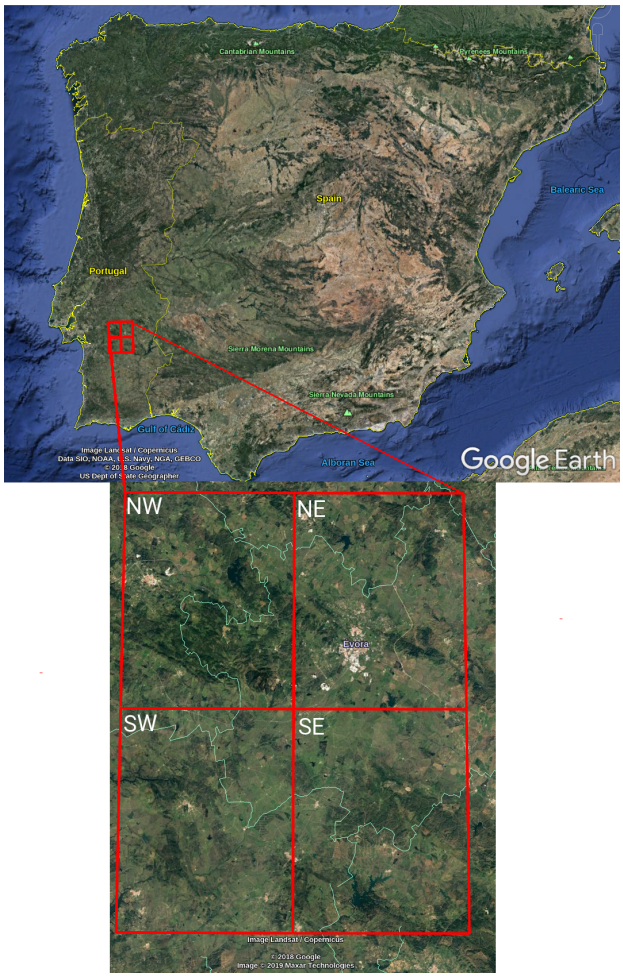

Figure S1. Google-earth view of Iberian Peninsula (top) and location of the 4 grid-points of the Southern Portugal domain (bottom).

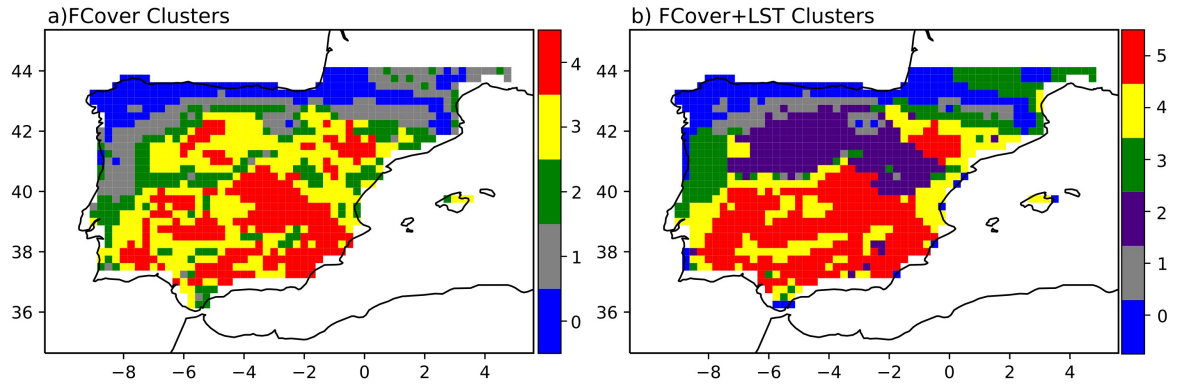

Figure S2. Clusters determined by the K-Means Algorithm using as input: (a) CGLS-FCover and (b) both LST and CGLS-FCover.

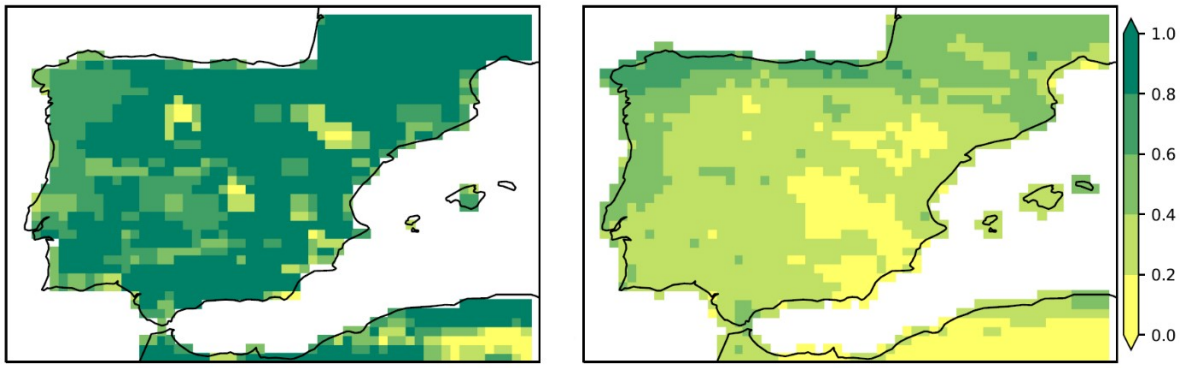

Figure S3. ERA5 Total Vegetation Cover (TVC, left) and the mean 1999-2018 CGLS FCover (right).

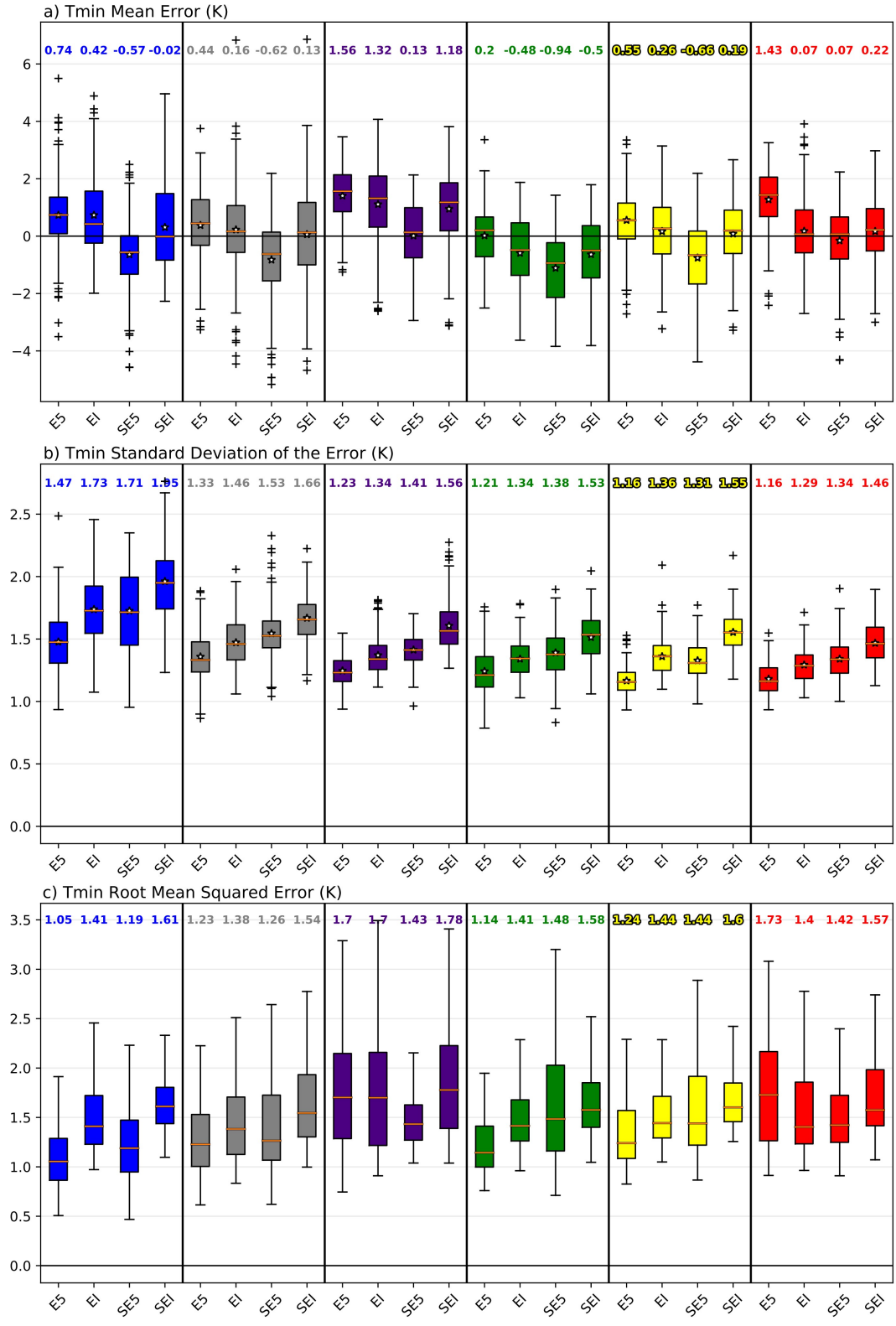

Figure S4. As Figure 3 but for Tmin.

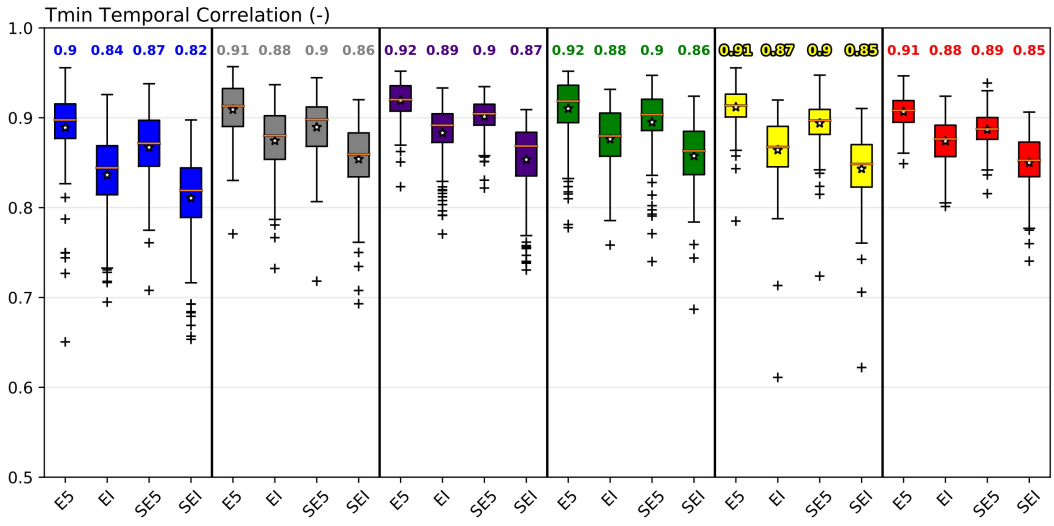

Figure S5. As Figure 4 but for Tmin.

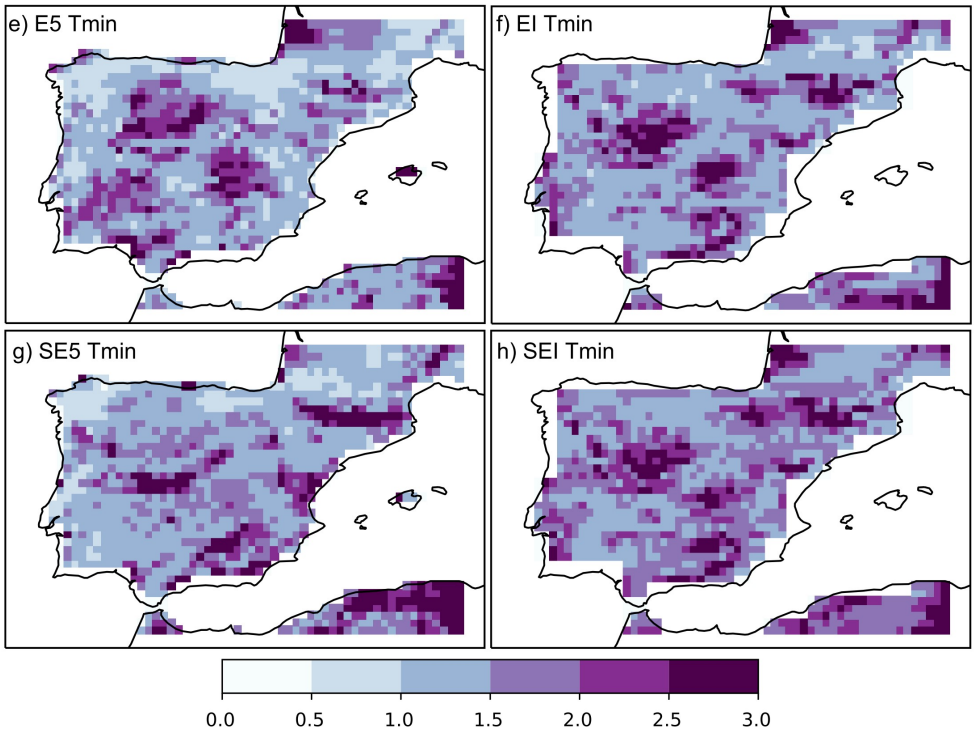

Figure S6. As Figure 5 but for Tmin. Note the different range of the colorbar 0-3 for Tmin while it was 0-12 for Tmax in Figure 5

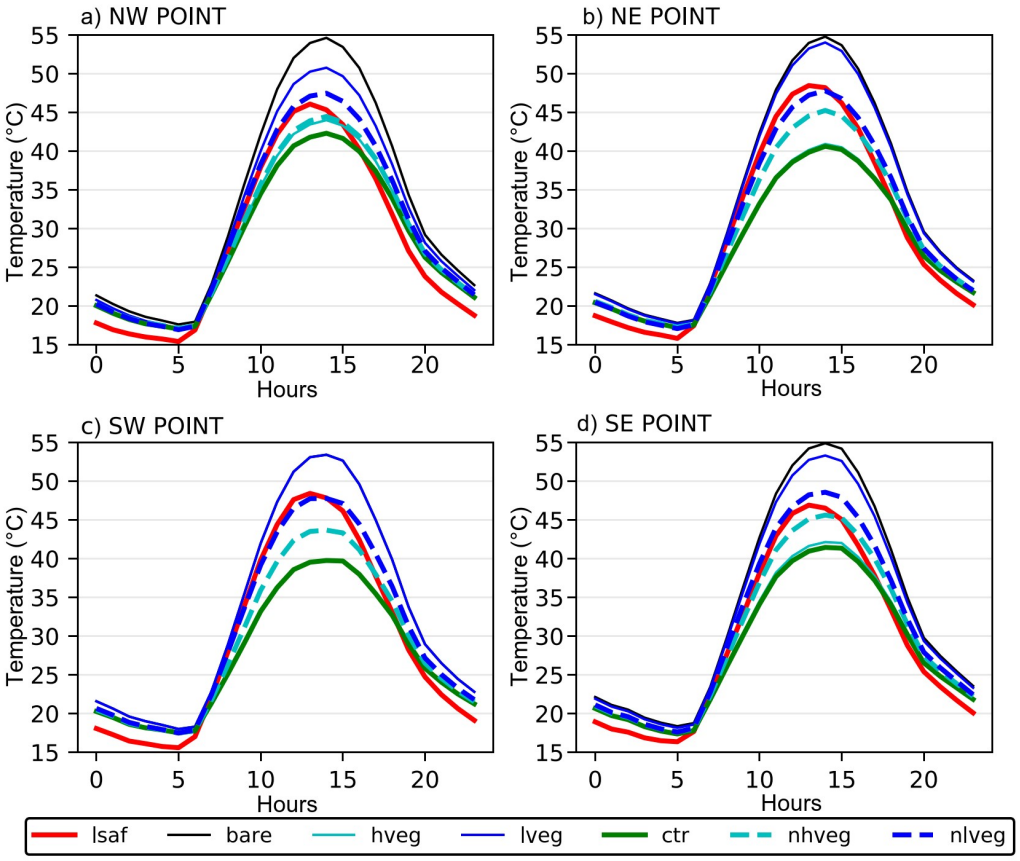

Figure S7. Mean diurnal cycle of temperature (2010 Summer) in the 4 points of the Southern Portugal domain comparing the satellite LST (red), and the LST in the control simulation (green), with several sensitivity experiments (see Table 2): bare (black), hveg (cyan), lveg (blue), nhveg (dashed cyan) and nlveg (dashed blue).

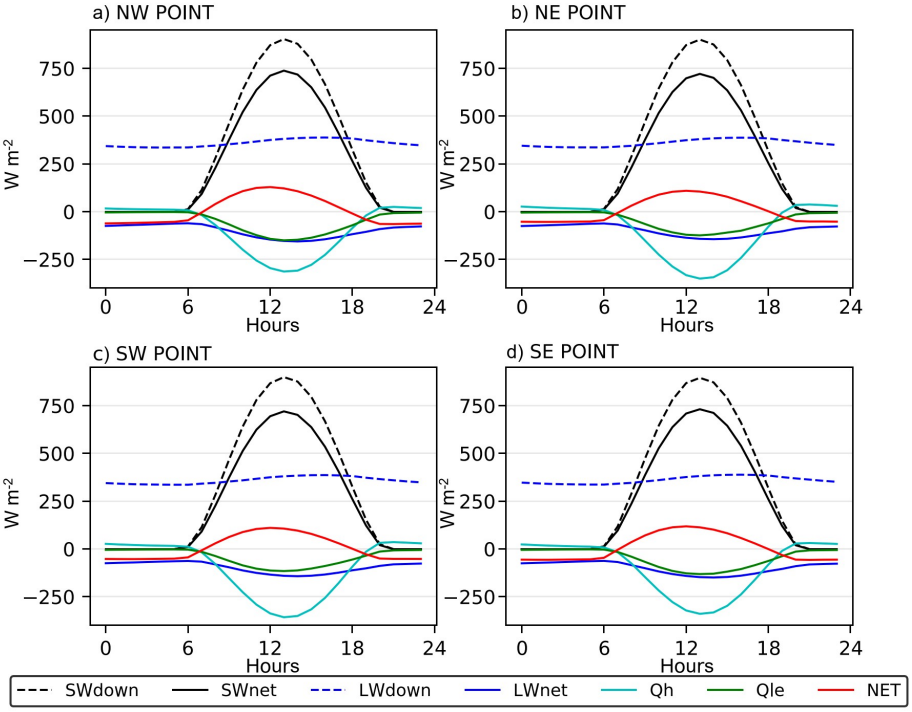

Figure S8. Surface energy balance of the control simulation (W m^{-2}): shortwave downward radiation (SWdown, dashed black), shortwave surface net radiation (SWnet solid black), longwave downward radiation (LWdown, dashed blue), longwave net surface radiation (LWnet, solid blue), sensible heat flux (Qh, solid cyan), latent heat flux (Qle, solid gree) and the net flux (NET=SWnet+LWnet+Qh+Qle, solid red). The fluxes sign conventions indicate fluxes to the surface as positive and fluxes leaving the surface as negative.

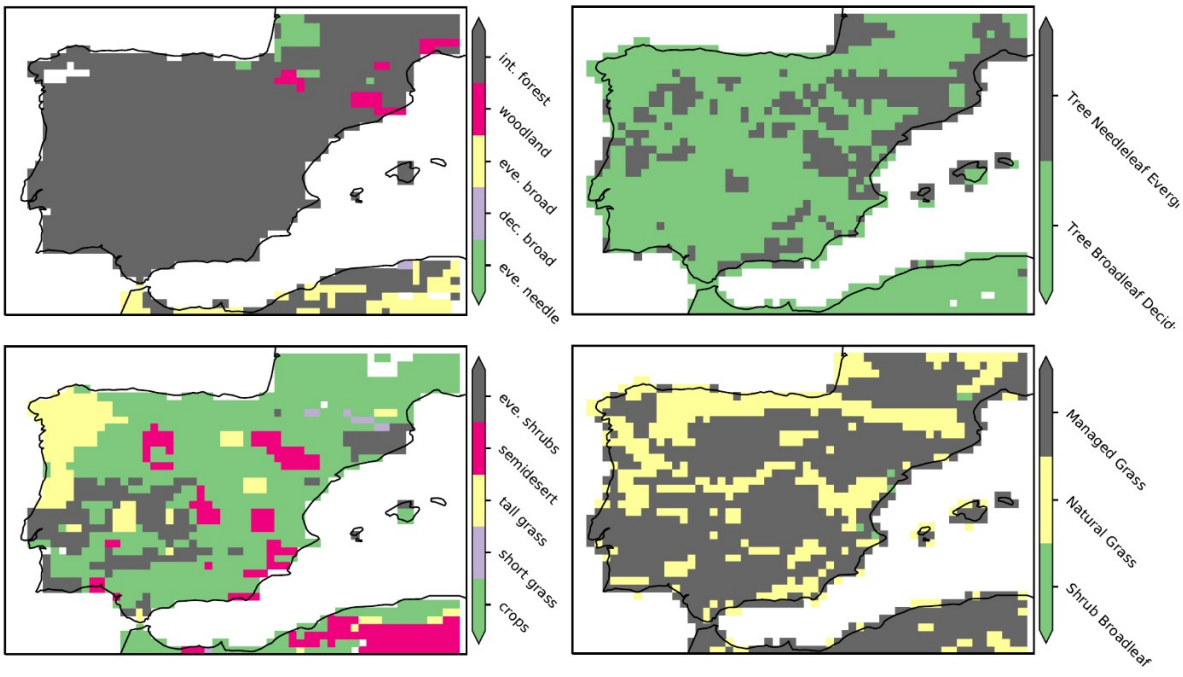

Figure S9. ERA5 (default IFS) type of high vegetation (top left) and type of low vegetation (bottom dow) and ESA-CCI derived dominant type of high vegetation (top right) and dominant type of low vegetation (top bottom). ~

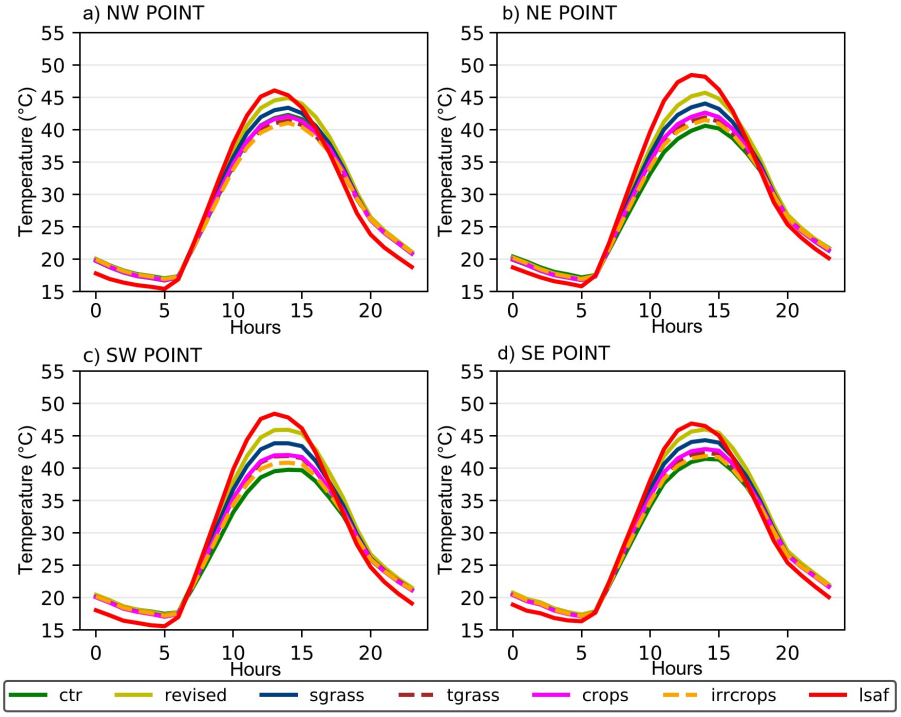

Figure S10. Mean diurnal cycle of temperature (2010 Summer) in the 4 points of the Southern Portugal domain comparing the satellite LST (red), and the LST in the control simulation (green), revised (dark yellow) and several different types of low vegetation: short grass (sgrass, blue), tall grass (tgrass, dashed brown), crops (magenta) and irrigated crops (irrcrops, dashed yellow). and nlveg (dashed blue).