

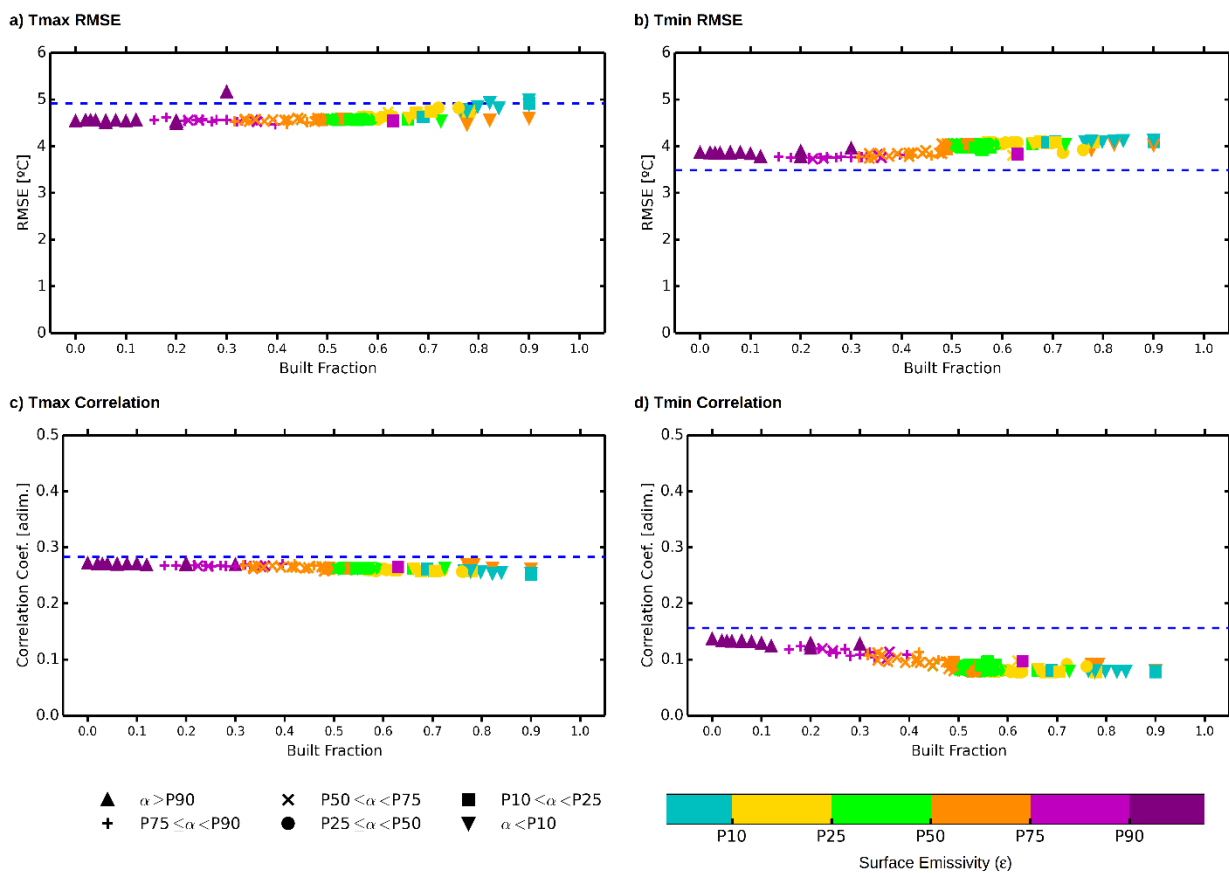
A surface modelling approach for attribution and disentangling the effects of global warming from urbanization in temperature extremes: application to Lisbon

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Supplementary Material



Supplementary Figure 1. Root-mean-squared error (RMSE) for a) T_{\max} and b) T_{\min} . Pearson correlation coefficient for c) T_{\max} and d) T_{\min} . All metrics were computed over the period 1981-2010 at daily time-scale using Lisbon station observations as reference. The blue dashed line represents E20C. Each of the markers represents one of the 125 SURFEX-TEB simulations. The marker colors represent the respective surface emissivity percentile (within the set of SURFEX-TEB simulation), while the marker type represents the surface albedo percentile. The high RMSE and low correlation coefficients found for both E20C and SURFEX-TEB simulations are due to the fact that the E20C dataset is only weakly constrained by observations, assimilating only surface pressure over land and marine winds, and thus a good day-to-day synchronization with the observations is not expected.