nection effects can also be used to model impacts from a vector $\boldsymbol{z}(\boldsymbol{r}, t) \in \mathbb{R}^m$ of m remote covariates at location $\boldsymbol{r} \in \mathcal{D}_Z$. Both extensions require sensibly modifying the remote coefficient covariance function (6) and will yield likelihood structures similar to the RESP model (3), especially if relationships between additional teleconnection effects are modeled with separable covariances.

Non-stationary covariance models and temporal extensions can also allow the RESP model to be applied to more diverse data and problems. While the teleconnection term (4) admits temporal non-stationarity moderated by the remote covariates, modeling temporal dependence across timepoints can allow the RESP model to be used in more traditional forecasting problems. Similarly, modeling spatial non-stationarity can potentially improve model fit and prediction at unobserved spatial locations. In particular, nonstationary covariances could allow the remote coefficients to vary temporally. This extension may be relevant because Mason and Goddard (2001) find that teleconnection effects can vary across seasons. As in Choi et al. (2015), however, changes over time may be difficult to detect because the effects tend to be weak.

Without considering any extensions, however, the RESP model yields additional discussion about spatial modeling. The RESP model's inclusion of dependence at both long and short distances echoes descriptions of the screening effect (Stein, 2015). Carefully studying spectral densities of covariance functions show that if they decay quickly enough, then spatial predictions are primarily driven by data from nearby locations. While the RESP model allows distant locations to influence spatial prediction, the RESP model does not contradict the screening effect because it explicitly models long range dependence through the teleconnection term (4) and the screening effect is a property of local covariance functions (5). Of similar subtlety, maps of estimated teleconnection effects (Figure 3) raise discussion about uncertainty estimates for spatial patterns. Significance in Figure 3 is determined pointwise with respect to the posterior distribution for $\alpha'(\boldsymbol{s}, 1)$ at each location so can provide inference for teleconnection effects at individual points. Here, pointwise significance can help