Seasonal variations in the spatial-temporal dependence of total column ozone

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Satellite-based instruments provide daily values of total column ozone on a fairly dense spatial grid with near global coverage. Statistical models for the spatial-temporal variations in total column ozone provide insights into ozone dynamics, are valuable for obtaining inferences on long-term trends in ozone levels, and can be used to impute missing values in the observations. However, developing such a model is complicated by the seasonally varying nature of the space-time dependence. This talk will consider methods for describing, modeling and estimating the seasonal patterns in the dependence structure. It will also address computational issues, including methods for approximating likelihoods for large space-time datasets with missing values.