



The University of Chicago
Department of Statistics

Mini-seminars for First Year Ph.D. Students

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Equatorial Normal Mode in Modeling Large-Scale Wind Component

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ABSTRACT

Spatio-temporal processes are ubiquitous in the environmental and physical sciences. This is certainly true of atmospheric and oceanic processes, which typically exhibit many different scales of spatial and temporal variability. The paper by Wilker and others focus on conditionally-specified (i.e., hierarchical) spatio-temporal models. These methods offer several advantages over traditional approaches. This modeling approach was necessitated by a scientifically meaningful problem in the geosciences. Satellite-derived wind estimates have high spatial resolution but are limited in global coverage. In contrast, wind fields provided by the major weather centers provide complete coverage but have low spatial resolution. The goal is to combine these data in a manner that incorporates the space-time dynamics inherent in the surface wind field. Only the geophysics model would be carefully discussed during the presentation.