

Multiscale inference for time-dependent spherical random fields

A seminar by Alessia Caponera

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Room Benvenuti
Department of Statistical Sciences

The analysis of time-dependent spherical random fields is the natural setting for a number of different areas of applications, such as Cosmology, Astrophysics, Geophysics, Climate and Atmospheric Science. In these areas, it is often a valid question to probe whether structural breaks have occurred over time; the most immediate example of such changes is obviously represented by shifts in the global mean, which would correspond to Global Warming when studying temperature data. We then present some inferential tools to study the behaviour of structural breaks in the harmonic domain (allowing modifications which may go beyond a simple global mean shift). Our approach, which intrinsically integrates the spatial and temporal dimensions, could give multiscale insights into both the global and local behaviour of changes. This will be motivated by a real dataset of global surface temperature anomalies.



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