



## **Investigating Time-varying Teleconnections by Means of Phase Difference Analysis**

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In the analysis of teleconnections in the climate system, one often faces a subtle time varying coupling strength that is not accessible by simple linear correlation analysis. Here we present a method widely used in nonlinear dynamics that estimates the time dependent phase difference between the two time series under investigation. This method provides a high time resolution and thus enables to reveal fluctuations invisible to standard methods. Furthermore it is capable of detecting subtle nonlinear relations which cannot be seen by linear methods. The method is illustrated by a recently published analysis of the paradigmatic ENSO/Indian summer monsoon teleconnection.