



## **Metastability of Northern Hemisphere Teleconnection modes**

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This work applies the FEM-BV-VARX method to study of the large scale modes of variability in the Northern Hemisphere as manifest in 500hPa geopotential height fields. The FEM-BV-VARX method identifies metastable states of the system. The results for regional domains confirm that the teleconnection modes referred to as the NAO in the Atlantic domain, PNA in the Pacific domain, and Scandanavian blocking in the Eurasian domain, all exhibit metastability. For the full Northern Hemisphere domain the metastable state combines the AO and a midlatitude circumglobal wavetrain pattern. These results are shown in a set of reanalysis products from NCEP; the 20th century reanalysis, NNR1, and the CFSR coupled reanalysis. The reanalysis products are all able to simulate the structure and temporal switching of regime states. Decadal and multidecadal regimes are clearly apparent in the model affiliation sequence of metastable states and correspond to known transition points for the teleconnection modes.