



## **The Emergence of El-Niño as an Autonomous Component in the Climate Network**

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We construct and analyze a climate network which represents the interdependent structure of the climate in different geographical zones and find that the network responds in a unique way to El-Niño events. Analyzing the dynamics of the climate network shows that when El-Niño events begin, the El-Niño basin partially loses its influence on its surroundings. After typically three months, this influence is restored while the basin loses almost all dependence on its surroundings and becomes autonomous. The formation of an autonomous basin is the missing link to understand the seemingly contradicting phenomena of the afore-noticed weakening of the interdependencies in the climate network during El-Niño and the known impact of the anomalies inside the El-Niño basin on the global climate system.

Ref. A. Gozolchiani, S. Havlin and K. Yamasaki, <http://arxiv.org/pdf/1010.2605>