

## CCSS\_Colloquium

### Synchronization and Complex Networks: Are such Theories Useful for Earth and Life Sciences?

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Synchronization phenomena are abundant in nature, science, engineering and social life. In the last two decades, this concept has been successfully applied to complex systems, e.g. for the identification of teleconnections in the climate system. Research on complex networks, on the other hand, has revealed a rich and complicated network topology in various model systems as well as in several fields of applications, such as transportation and social networks, or the WWW. Applications are found e.g. in immunization problems (spreading of diseases), biological/physiological processes (protein networks), or traffic networks (vehicles, air traffic). A challenging task is to understand the implications of network structures on the functional organization of the system Earth. We show that the climate system can be interpreted as a highly dynamic network. This approach gives new insights into the vulnerability of the system Earth.

**When?** Tuesday, 24 November 2009, 17.00-19.00

**Where?** ETH Zürich, Universitätsstrasse 6, CAB G 52