



## **Extreme hydroclimatic events and their socio-economic consequences**

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This talk will quickly summarize some earlier work reported in [1,2] and then focus on recent work in progress. The former will include two complementary views on the classical, 1300-year long Nile River records. The latter will cover studies of damage propagation in production-and-supply networks [3,4]. Here we use Boolean delay equations (BDEs), a semi-discrete type of dynamical systems [5], to explore the effect of network topology and of the delays in the supply on network resilience.

[1] M. Ghil et al., *Nonlin. Processes Geophys.* (2011)

[2] M. Chavez, M. Ghil & J. Urrutia Fucugauchi, *Extreme Events: Observations, Modeling and Economics*, Geophys. Monograph 214, AGU & Wiley (2015)

[3] B. Coluzzi et al., *Intl. J. Bifurcation Chaos* (2011)

[4] C. Colon & M. Ghil, *Chaos*, submitted (2017)

[5] M. Ghil et al., *Physica D* (2008)