

# **The Dynamics of success, fame and crisis: Endogenous versus Exogenous Shocks in Complex Networks**

Prof. Didier Sornette

*Eidgenössische Technische Hochschule Zürich*

We discuss the evidence for and theory of a generic dynamical law characterizing the activity of systems going to and following a peak, a crisis or a climax. A deep relationship is uncovered between the response to exogenous shocks and the endogenous fluctuations of the activity of systems driven by the epidemic-like interactions, such as word-of-mouth contacts in social networks and triggering processes in natural systems. This constitutes a generalized fluctuation-susceptibility theorem of such out-of-equilibrium systems with punctuated dynamics. Applications include the dynamics of commercial sales, YouTube video success, financial volatility shocks, market crashes, bursts of cyber-risks, social conflicts and crises, epileptic seizures, earthquakes, landslides, climate dynamics and so on.