Extreme values for dynamical systems and linear response

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Extremes are related to high impact and serious hazard events and hence their study and prediction has been and continuous to be highly relevant for all kind of applications in geoscience and beyond. In the last fifteen years the classical extreme value theory for stochastic processes has been extended to high dimensional (chaotic) dynamical systems. We will review the relation between the parameters of the extreme distributions and invariants of the underlying dynamical system. Modulation of external factor (climate change as an obvious example) have an impact on extremes and their properties. We explore whether there exists a response theory for extremes, that is, whether the change of extremes is for small changes linear with respect to the external factors.