title: Historic Behaviour (Floris Takens)

abstract: For dynamical systems, say of the form $\varphi : X \to X$, φ a continuous map, we say that an orbit $\{x, \varphi(x), \varphi^2(x), \ldots\}$ has *historic behaviour* if for some continuous function $f : X \to \mathbf{R}$ the average $\lim_{n\to\infty} \frac{1}{n+1} \sum_{i=0}^{n} f(\varphi^i(x))$ does not exist. Many think that for compact differentiable X and differentiable φ this historic behaviour should be exceptional (in a sense to be specified). Up to now this expectation has not been transformed into a theorem.

In this lecture I will discuss various examples of historic behaviour which, though still exceptional, do occur e.g. in generic 1-parameter families and hence are not *that* exceptional.