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Using entropy to cut complex time series[1] DAVID MERTENS, JULIA PONCELA CASASNOVAS, BONNIE SPRING, L.A.N. AMARAL , Northwestern University — Using techniques from statistical physics, physicists have modeled and analyzed human phenomena varying from academic citation rates to disease spreading to vehicular traffic jams. The last decade's explosion of digital information and the growing ubiquity of smartphones has led to a wealth of human self-reported data. This wealth of data comes at a cost, including non-uniform sampling and statistically significant but physically insignificant correlations. In this talk I present our work using entropy to identify stationary sub-sequences of self-reported human weight from a weight management web site. Our entropic approach–inspired by the infomap network community detection algorithm–is far less biased by rare fluctuations than more traditional time series segmentation techniques.

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