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Markus Schläpfer* (schlmark@mit.edu), MIT, Cambridge, MA 02139. *Quantifying the dynamics of cities with human activity patterns.*

The recent availability of many new and large-scale data of human activities opens up unprecedented possibilities to quantify the social dynamics and organization of cities. Here we show that analyzing society-wide communication networks inferred from mobile phone data allows us *i)* to derive a natural definition of cities, *ii)* to reveal the organization of cities in terms of interacting subcenters, and *iii)* to assess the impact of cities on the network of human interactions. (Received February 12, 2014)