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Temporal and spatial regularity of mobile-phone data¹ PHILIPP HOEVEL, TU Berlin, Germany, ALBERT-LASZLO BARABASI, CCNR, Northeastern University — Network science is a vibrant, interdisciplinary research area with strong connections to a plethora of different fields. As the amount of empirically obtained datasets increases more and more, approaches from network sciences continue to enhance our understanding, for instance, of human dynamics. The available data often consist of temporal as well as spatial information. In our case they originate from anonymized mobile-phone traces, which include information about the timing of the connections between two mobile phones and also their positions. Thus, the data contains an additional social component. In this study, we evaluate patterns of human behavior identifying both temporal and spatial regularity. This leads to a detailed mobility analysis on various timescales and contributes to a general theory of synchronization in complex, real-world networks.

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