

Abstract Submitted
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What scales in multiscale human mobility networks? RAFAEL BRUNE, CHRISTIAN THIEMANN, DIRK BROCKMANN, Northwestern University — Although significant research effort is currently devoted to the understanding of complex human mobility and transportation networks, their statistical features are still poorly understood. Specifically, to what extent geographical scales impose structure on these networks is largely unknown. Statistical properties of these networks have been obtained either for large scale networks or on small scale systems, indicating significant differences between the two. We will present a systematic investigation of various single scale mobility networks extracted from a comprehensive multi-scale proxy network, covering sequential length scales of a few to a few thousand kilometers. We will report that certain properties such as mobility flux distribution are universal and independent of length scale, whereas others vary systematically with scale. Furthermore we investigate the relation of a series of network characteristics as a function of scale and analyze how the different length scales interact in the embedding multiscale network.

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