

Mittag-Leffler Communicability Distance and shortest geodesics on networks

Monday, 20 January 2025 16:00 (2 hours)

The Mittag-Leffler functions interpolate between the exponential and the resolvent functions, and they can be used for walk-based indices in networks, allowing to tune the weight of longer closed walks. Here we study the Communicability based on the Mittag-Leffler function, and define Mittag-Leffler communicability distance functions, which are proved to be Euclidean and spherical. We then geometrize the graphs based on these distances and obtain the corresponding geodesics based on them. We finally analyze these geodesics for different kinds of real-world networks.

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