Spatial patterns of dengue cases in Brazil

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Patterns of spatial spreading of dengue epidemics in Brazil are presented, including their temporal evolution in all Brazilian municipalities for a period of twelve years. It was showed that the distributions of cases in municipalities follow power laws and that the infection scales linearly with the population of the municipalities. Also, it was verified a spatial correlation of the number of dengue cases between pairs of municipalities, following a power-law with an exponential cut-off. This behaviour was modeled within the framework of a Edwards-Wilkinson equation with a fractional derivative on space.

Reference

F.J. Antonio, A.S. Itami, S. Picoli, J.J.V. Teixeira, R.S. Mendes, PLoS ONE, e0180715 (2017).