

## How contact pattern influence epidemic outbreaks

*Thursday, 7 April 2022 11:30 (45 minutes)*

I will present a data-driven approach to identify from physical proximity data features of human contact patterns that determine crucial properties of epidemic outbreaks. From the physical proximity data, we construct for each individual

a point-process-like representation of their contacts, from which we estimate the distribution of potential secondary infections for different disease models.

The resulting distributions drastically differ from randomized surrogate data. Building branching processes from this empirical data, we demonstrate how the clustering of contacts decreases the robustness of disease outbreaks and how the

cyclostationarity of contacts modulates the pace of epidemic spread.

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**Session Classification:** Complex/Biological Systems