Breakout Session E: Spatial Point Processes

In the early spatial point process literature, point patterns were typically small, observed in 2D, had quite simple interaction structures, and there were no repetitions available. The observed point patterns were assumed to be realizations of stationary and isotropic point processes. Furthermore, e.g. clustered patterns were typically modelled by assuming conditional independence between the cluster points given the Poisson distributed parents. Nowadays, large data sets (with repetitions) observed both in 2D and in 3D have become more and more common and it is less likely that stationarity and/or isotropy assumptions hold and that simple interaction structures are enough for realistic modelling of the data. Even spatio-temporal point pattern data have become common.

The theme of the session is to discuss the challenges of the more complicated point pattern data mentioned above. Some possible topics for discussion are

1. Inhomogeneous or anisotropic?
2. Different types of anisotropy. How to test anisotropy?
3. How to model dependencies in clustered point patterns?
4. Spatio-temporal point processes

References

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