

## Stationarity and point-stationarity, the Palm dualities

**Hermann Thorisson** (University of Iceland, Reykjavik)

Consider a jointly stationary pair  $(Z, N)$  where  $Z$  is a random field indexed by  $d$ -dimensional space and  $N$  is a simple spatial point process. The Palm version of  $(Z, N)$  is, intuitively, another pair having the conditional distribution of  $(Z, N)$  given that  $N$  has a point at the origin. The Palm version is sometimes also interpreted as behaving like  $(Z, N)$  seen from a typical point, but this is a truth with modification: there is in fact an alternative Palm version having this latter interpretation.

In this talk we present an intuitively motivated two-step construction of each Palm version. Both Palm versions are characterized by point-stationarity, that is, the point at the origin is a typical point in both cases. The constructions have straightforward reversals turning a point-stationary pair into a stationary one, thus establishing dualities between stationary and point-stationary pairs. The Poisson process will be used as an illustrative example and we shall start by considering the one-dimensional case.

If time allows we shall consider what “typical” means, formally, and extend the view to random measures, with Brownian motion and its local time taking the place of the Poisson process as an example.