

STANFORD UNIVERSITY  
DEPARTMENT OF STATISTICS  
DEPARTMENTAL SEMINAR

4:15 p.m., Thursday, August 17, 2000  
Sequoia Hall Rm. 200

*Hermann Thorisson*  
*Science Institute*  
*University of Iceland*  
*107 Reykjavik*  
*Iceland*

**Point-Stationarity in  $d$  Dimensions and Palm Theory**

Point-stationarity formalizes the intuitive idea of a simple point process in  $R^d$  for which the behaviour relative to a given *point of the process* is independent of the point selected as origin. (Note that this is different from stationarity, which means that the behaviour of the process relative to a given *non-random* site in  $R^d$  is independent of the site selected as origin).

For  $d = 1$ , point-stationarity has a straightforward definition: it means distributional invariance under shifts of the origin to the  $n$ th point on the right (or left) of the point at 0 (for instance, a stationary Poisson process becomes point-stationary if we add a point at 0). For  $d > 1$ , this definition clearly does not work. But is there some similar way to move between points in higher dimension? Think about it.

In this talk we give meaning to (that is, define) point-stationarity in  $d > 1$  dimensions. Our definition (luckily) turns out to be the characterizing property of the so-called Palm version of a stationary point process (as is the case in one dimension). We also show how shift-coupling has a natural place in this Palm theory.

Reference:

Thorisson, H. (2000). Coupling, Stationarity, and Regeneration. Springer, NY,  
[<http://www.hi.is/hermann>]