1077-05-2062 **Svante Linusson*** (linusson@math.kth.se). *On the bunkbed conjecture and related problems.*

I will describe what is known about a problem on percolation on product graphs $G \times K_2$. Here G is any finite graph and K_2 consists of two vertices $\{0, 1\}$ connected by an edge. In edge percolation every edge in $G \times K_2$ is present with probability p. An old conjecture, dating at least to Kateleyn in 1985, says that for all G and p the probability in this situation that $(u, 0)$ is in the same component as $(v, 0)$ is greater than the probability that $(u, 0)$ is in the same component as $(v, 1)$ for every pair of vertices u, v in G.

In recent work this conjecture was generalized in several steps and similar statements for randomly directed graphs were formulated and proved. The methods lead in particular to a proof of the original conjecture for outerplanar graphs G. (Received September 21, 2011)