Speaker: Tony Johansson

Title: Deletion of oldest edges in a preferential attachment graph

Abstract: We consider a variation on the Barabsi-Albert random graph process with fixed parameters $m \geq 1$ and $1/2 < p < 1$. With probability p a vertex is added along with m edges, randomly chosen proportional to vertex degrees. With probability $1 - p$, the oldest vertex still holding its original m edges loses those edges. It is shown that the degree of any vertex either is zero or follows a geometric distribution. If p is above a certain threshold, this leads to a power law for the degree sequence, while a smaller p gives an exponential law. It is also shown that the graph contains a unique giant component with high probability if and only if $m \geq 2$.