

PIMS Distinguished Lecturer



Claire Mathieu,

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this week: Thursday, August 13th at 3:00 pm
ECS Building, room 660

Title:

Homophily and the Emergence of a Glass Ceiling Effect in Social Networks

Abstract:

The glass ceiling may be defined as “the unseen, yet unbreakable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements”. Although undesirable, it is well documented that many societies and organizations exhibit a glass ceiling.

In this paper we formally define and study the glass ceiling effect in social networks and provide a natural mathematical model that (partially) explains it. We propose a biased preferential attachment model that has two type of nodes, and is based on three well known social phenomena: i) minority of females in the network, ii) rich get richer (preferential attachment) and iii) homophily (liking those who are the same). We prove that our model exhibits a strong class ceiling effect and that all three conditions are necessary, i.e., removing any one of them, will cause the model not to exhibit glass ceiling. Additionally we present empirical evidence of a student-mentor network of researchers (based on DBLP data) that exhibits all the above properties: female minority, preferential attachment, homophily and glass ceiling.

Joint work with: Chen Avin, Barbara Keller, Zvi Lotker, David Peleg, Yvonne-Anne Pigolet



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