Title: *Unifying Different Types of Gaussian Chain Graphs (LWF and AMP) to Model Interference*

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Place: UB338

Abstract

An intervention may have an effect on units other than those to which it was administered. This phenomenon is called interference and it usually goes unmodeled. In this seminar, we propose to combine Lauritzen-Wermuth-Frydenberg (LWF) and Andersson-Madigan-Perlman (AMP) chain graphs to create a new class of causal models that can represent both interference and non-interference relationships. Specifically, we define the new class of models, introduce global and local and pairwise Markov properties for them, and prove their equivalence. We also propose an algorithm for maximum likelihood parameter estimation for the new models, and report experimental results. Finally, we adapt Pearl's do-calculus for causal effect identification in the new models.