DIRECTED GRAPHS FOR REPRESENTING CAUSAL INFLUENCES

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Graphical models, especially directed acyclic graphs have now become an integral part of causal reasoning and modelling. However, the classical graphs are somewhat limited when it comes to representing inherently dynamic processes. In this talk, I will discuss the use of so-called local independence graphs (Didelez, 2008) for causal inference. These graphs represent dynamic relations between events that occur in continuous time, similar to what is known as Granger-causality for time series. They can be used to investigate situations of dynamic confounding as well as dynamic selection and hence support causal reasoning.

Didelez, V. (2008): Graphical models for marked point processes based on local independence. JRSSB, 70, 245-264.