



Colóquio do IMECC

Bayesian Networks: elicitation, temporal modeling and applications

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Resumo: This work proposes a framework based on Bayesian networks to model complex dynamic systems, integrating expert elicitation and historical data. It proposes discrete and continuous temporal modeling approaches based on dynamical models. Dynamic Bayesian Networks enable smooth transitions over time, accommodating missing and irregular data. The approach allows for nonlinear relationships, mediated effects, and causal interpretation under uncertainty. Applications are presented for food security in the UK and Brazil, using household-level data and expert-informed models.