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Resumo	Reduction of graphs is a class of procedures used to decrease the dimensionality of a given graph in which the properties of the reduced graph are to be induced from the properties of the larger original graph. This paper introduces both a new method for reducing chain graphs to simpler directed acyclic graphs (DAGs), that we call
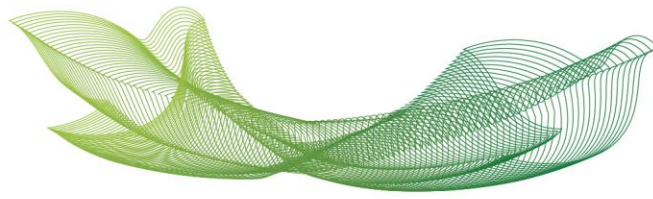
power chain graphs (PCG), as well as a procedure for structure learning of this new type of graph from correlational data of a Gaussian graphical model. A definition for PCGs is given, directly followed by the reduction method. The structure learning procedure is a two-step approach: first, the correlation matrix is used to cluster the variables; and then, the averaged correlation matrix is used to discover the DAGs using the PC-stable algorithm. The results of simulations are provided to illustrate the theoretical proposal, which demonstrate initial evidence for the validity of our procedure to recover the structure of power chain graphs. The paper ends with a discussion regarding suggestions for future studies as well as some practical implications.

Fomento