On the uniqueness of network identification

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Due to cost concerns, it is optimal to gain insight into the connectivity of biological and other networks using as few experiments as possible. Data selection for unique network connectivity identification has been an open problem since the introduction of algebraic methods for reverse engineering. In this manuscript we determine what data sets uniquely identify the unsigned wiring diagram corresponding to a system that is discrete in time and space. Furthermore, we answer the question of uniqueness for signed wiring diagrams for Boolean networks.