

# Semi-tensor product representations of Boolean networks

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The semi-tensor product of two matrices is a way to multiply them together regardless of their sizes, and this generalizes standard matrix multiplication. Recently, a number of researchers, mostly from the engineering community, have been applying semi-tensor products to Boolean networks. I will show how problems on the stability, fixed points, and transient length can be encoded in this structure. Familiar Boolean models of the *lac* and *ara* operon will be used as examples.