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Compositional design and tasking of networks. Preliminary report.

Network models provide a flexible method to construct operads to compose networks: one specifies an appropriate functor. This talk explores the problem of matching the kind of network in some application to a specific network model. In particular, we give examples of different kinds of networks whose composition is modeled as an algebra of a suitable operad that is constructed from a network model. Remarkably this style of operad can provide a unified treatment of the structural design and behavioral tasking of dynamic networks. (Received September 05, 2017)