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A rule for coarse graining phase oscillator models DAVID MERTENS, Dickinson College — The Kuramoto model is often studied as a paradigm for synchronization. Among phase oscillator models, the Kuramoto model exhibits unique properties that simplify the analysis, and call into question whether or not results from the Kuramoto model are applicable to other phase oscillator models. Instead of focusing on the Kuramoto model, I show how a coarse graining procedure can be applied to generic phase oscillator models with global coupling, providing an alternative method for analyzing their critical behavior. In particular, I discuss a simple geometrically motivated rule that is crucial for the coarse graining approximations.

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