English summary:

Frustrated Synchronization of the Kuramoto Model on Complex Networks.

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It is well known that neurons involved in brain function have oscillatory properties. The brain works around the synchronization point. Physicists have created simple models for this (e.g. Kuramoto model). We compare synchronization of the Kuramoto model over complex networks on 4 and 5 dimensional regular lattices. We obtain results that in dimensions above 4, the type of synchronization transition is different on complex networks than on equal dimensional regular lattices.
We found dynamic/time dependent scaling in extended coupling region, where the fluctuations diverge. Thus, network heterogeneity appears to be relevant for scaling.

References:

https://www.mdpi.com/1099-4300/26/12/1074