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Title:	Rotor dynamics in one and two dimensions
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Abstract:	A classical 1-D chain of rotors mimicking Non-Newtonian fluids and showing different flow regimes under different parameters is reproduced [Eva+15]. The ends of the 1-D rotor system are rotated in opposite directions, and it is seen that the phase behaviour is analogous to a complex fluid system, with the angular velocity distribution of the rotors representing the shear flow in fluids. Then upon increasing the dimension, a 2D system of rotors with an added hydrodynamic interaction is studied as a model for bacterial carpets. Each rotor has an intrinsic angular velocity, and also subjects a force on the surrounding fluid, which leads to synchronization and spirals formation in the fluid flow under different cases[UG10].
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