Title:	Rotor dynamics in one and two dimensions
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Abstract:	A classical 1-D chain of rotors mimicking Non-Newtonian □uids and showing di□erent □ow regimes under di□erent 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 □uid system, with the angular velocity distribution of the rotors representing the shear □ow in □uids. 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 □uid, which leads to synchronization and spirals formation in the □uid □ow under di□erent cases[UG10].
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