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Collective dynamics of rotating colloidal particles SOFIA MAGKIRIADOU, VISHAL SONI, University of Chicago, BENNY VAN ZUIDEN, Leiden University, DENIS BARTOLO, Ecole Normale Suprieure de Lyon, VINCENZO VITELLI, Leiden University, WILLIAM T.M. IRVINE, University of Chicago — We study magnetic colloidal particles in suspension under the influence of a rotating magnetic field. When in aggregates, these particles show rich dynamics that are governed by magnetic and hydrodynamic interactions. By tuning these interactions, we probe the phase diagram of this system and study the emergent collective dynamics. Finally, we begin to investigate whether we can control this phase diagram with geometry.

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