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Effective Interactions in Systems of Active Particles MATTHEW SPELLINGS, MICHAEL ENGEL, DAPHNE KLOTSA, WENBO SHEN, GREG VAN ANDERS, SHARON C. GLOTZER, University of Michigan — Systems of linearly-driven active particles have been shown to exhibit fluid-solid coexistence in experiments and simulations. Still, the behavior of these and rotationally-driven anisotropic particles remains open for exploration. In this talk, we show that the addition of a constant driving torque for each particle to form an active system has a nonlinear effect on emergent forces between particles, which can be tuned to be attractive or repulsive. Effective interactions due to activity are naturally switchable and give us a new, orthogonal design dimension for assembly engineering in addition to more traditional design variables such as particle shape and enthalpic patchiness.

Matthew Spellings
University of Michigan

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