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Kinetics of motility-induced phase separation and swim pressure<sup>1</sup> ADAM PATCH, DAVID YLLANES, M. CRISTINA MARCHETTI, Department of Physics and Soft Matter Program, Syracuse University — Active Brownian particles (ABPs) represent a minimal model of active matter consisting of self-propelled spheres with purely repulsive interactions and rotational noise. We correlate the time evolution of the mean pressure towards its steady state value with the kinetics of motility-induced phase separation. For parameter values corresponding to phase separated steady states, we identify two dynamical regimes. The pressure grows monotonically in time during the initial regime of rapid cluster formation, overshooting its steady state value and then quickly relaxing to it, and remains constant during the subsequent slower period of cluster coalescence and coarsening. The overshoot is a distinctive feature of active systems.

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