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Cell Size Clues for the Allee Effect in Vegetative Amoeba Suspension Culture CARL FRANCK, BRENDAN RAPPAZZO, XIAONING WANG, IGOR SEGOTA, Cornell University — That cells proliferate at higher rates with increasing density helps us appreciate and understand the development of multicellular behavior through the study of dilute cell systems. However, arduous cell counting with a microscope reveals that in the model eukaryote, *Dictyostelium discoideum* this transition is difficult to ascertain and thereby further explore despite our earlier progress (Phys. Rev. E 77, 041905, (2008)). Here we report preliminary evidence that the slow proliferation phase is well characterized by reduced cell size compared to the wide distribution of cell sizes in the familiar exponential proliferation phase of moderate densities. This observation is enabled by a new system for characterizing cells in stirred suspension cultures. Our technique relies on quickly acquiring magnitude distributions of detected flashes of laser light scattered in situ by cell targets.

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