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Jamming around fixed obstacles[1] AMY BUG, SAM BULLARD-SISKEN, Swarthmore College, CARL GOODRICH, University of Pennsylvania, LISA MANNING, Syracuse University, ANDREA LIU, University of Pennsylvania — Lattices of obstacles, such as microfluidic arrays, are capable of filtering or sorting particles like emulsion droplets, colloidal particles, and even cells. We study the jamming of soft, bidisperse discs placed within a lattice of fixed obstacles. Such obstacles provide a supporting structure for the jammed configuration, and their ability to alter a jamming threshold is of interest. Conjugate gradient methods are used to find minimum energy configurations, both with and without fixed obstacles. The likelihood of jamming as a function of disc volume fraction is calculated. If a configuration is jammed, the coordination number, energy, pressure, and other parameters of interest are calculated as a function of the obstacle size, number density, and configuration (hexagonal vs. square vs. random lattices).

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