

## Reentrant glass transitions in confined hard-sphere glasses

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We perform molecular dynamics simulations for a slightly polydisperse hard-sphere fluid confined between two parallel walls [1]. The mean-square displacements parallel to the surfaces are drastically suppressed as density is gradually increased. For high packing fractions we find a glass transition occurring at lower packing fractions compared to bulk systems. We observe a striking reentrant behavior for the glass-transition line upon widening the confinement. The oscillatory behavior of the phase diagram is rationalized in terms of a numerical solution of a recently developed mode-coupling theory [2].

[1] S. Mandal, S. Lang, R. Schilling, M. Oettel, D. Raabe, T. Farnosch, and F. Varnik in preparation

[2] S. Lang, V. Botan, M. Oettel, D. Hajnal, T. Farnosch, and R. Schilling PRL 105, 125701 (2010)