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Experimental Verification of the Reverse Brazil Nut Effect PAUL QUINN, JUSTIN SMOYER, Kutztown University of PA — In the Brazil nut problem (BNP), hard spheres with larger diameters rise to the top. In a previous paper, [Phys. Rev. Lett. **86**, 3423(2001)], a theory was presented for the crossover from BNP to the reverse Brazil nut problem (RBNP) based on the competition between the percolation effect and the condensation of hard spheres. We experimentally test the crossover condition as predicted by the theory. Our results show that the RBNP does occur under certain conditions. We then verify the crossover conditions as predicted by the theory in three dimensions.

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