

# Long range particle density profiles induced by scanning optical tweezers

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We have shown theoretically and experimentally that a local drive causes long range steady state density profiles in the sedimentated uniform layer of colloid particles. The theoretical calculations performed in [1] for a two dimensional particle lattice have been adapted to a layer of colloidal particles locally driven by scanning optical tweezers. It was shown that the localized drive should induce long range density profiles in the layer. Long range density profiles have been experimentally induced in a sedimentated layer of silica particles by applying certain scanning sequence to the optical trap. The obtained experimental results are in good agreement with theoretical predictions.

## Références

- [1] Tridib Sadhu, Satya N. Majumdar, and David Mukamel. Long-range steady-state density profiles induced by localized drive. *Phys. Rev. E*, 84 :051136, Nov 2011.  
URL <http://link.aps.org/doi/10.1103/PhysRevE.84.051136>.