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# Non potential gravitation-like interactions

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## Abstract

In some specific cases, laser induced forces in clouds of cold atoms bear some similarities with 2D gravity, but do not derive from a potential. Motivated by these possible experiments, we try to explore the long time behavior of this out-of-equilibrium system; in particular, is there a finite-time blow up, as for 2D self gravitating Brownian particles, or 2D chemotaxis?

Work in collaboration with B. Marcos, D. Wilkowski + N. Fournier, P.E. Jabin and others.

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