

## Optimal preparation of quantum states on an atom chip device

Thu, 2014-11-27 11:09 - [Mattia Giardini](#) [1] **Date:** 2014-05-27 - 2014-11-27

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### Reference:

arXiv:1405.6918

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Atom chips provide compact and robust platforms towards practical quantum technologies. A quick and faithful preparation of arbitrary input states for these systems is crucial but represents a very challenging experimental task. This is especially difficult when the dynamical evolution is noisy and unavoidable setup imperfections have to be considered. Here, we experimentally prepare with very high small errors different internal states of a Rubidium Bose-Einstein condensate realized on an atom chip. As a possible application of our scheme, we apply it to improve the sensitivity of an atomic interferometer.

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