

Interferometry with Bose-Einstein condensates in extended free fall

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In the talk, I will report on experiments exploiting quantum degenerate gases for atom optics and interferometry in extended free fall.

New perspectives emerge for our research by exploiting the Bremen gravitower and the Hannover Einstein Elevator, they do offer two to four seconds of free fall in microgravity, respectively, but more importantly, they both offer much larger repetition rates and, hence, allow for more detailed systematic studies and better statistics.

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