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**Particle losses in Bose-Einstein condensates** KRZYSZTOF PAWLOWSKI, Center for Theoretical Physics PAS, DOMINIQUE SPEHNER, GIULIA FERRINI, FRANK HEKKING, ANNA MINGUZZI, Laboratoire de Physique et Modelisation, des Milieux Condenses, CNRS, CENTER FOR THEORETICAL PHYSICS, PAS COLLABORATION, LABORATOIRE DE PHYSIQUE ET MODELISATION, DES MILIEUX CONDENSES, CNRS COLLABORATION
— The two mode coherent atomic state, so called SU(2) state, evolves in the presence of particle interactions to highly entangled state. The Fisher information increases in the evolution to its maximal possible value. Thus, the system may be useful in the interferometry. Here we study its Fisher information decay due to particle losses. We explain in details new phenomena caused by these processes and finally their effect on the "usefulness" of two mode Bose-Einstein condensate for ultra precise measurements.

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