Three-Body Losses in Quenched Bose-Einstein Condensate

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Bose-Einstein Condensate Experiments have a high degree of control over temperature, density, trapping potential, etc. In our experiment, we have an almost pure sodium Bose-Einstein Condensate in an optical trap, which we can manipulate the confinement level. Currently, our group is focused on fast changes in the trapping potential, studying the evolution of the out-of-equilibrium cold cloud. In this work, we quickly compress the cloud by increasing the depth of the optical potential and study how one- and three-body losses scale for different ramp compressions. Our results are then compared with theoretical predictions for cold cloud losses, providing good insights into quench dynamics for BECs.