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Experimental Setup in Cold Atom Experiment

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Abstract content
   (Max 300 words)

Over the last two decades there has been much research in the field of cold atoms. This field has lead to many breakthroughs in numerous fields including atomic and molecular physics as well as precision meteorology. The importance of these breakthroughs has resulted in several Nobel Prizes in Physics being awarded in this field. The magneto-optical trap (MOT) has become the power-house of such experiments. It allows researchers to routinely cool, trap and manipulate a large number of atoms at sub-Doppler temperatures for various types of experiments.

In this poster the experimental setup for laser cooling and trapping of 87-Rb atoms with the aid of a MOT is presented. Such an experiment has a diverse setup, which includes; a vacuum system in which the cooling and trapping takes place, a laser system, which provides optical power for cooling; a magnetic field, which creates a trapping force for the atoms; and an imaging system which can be used to determine many of the properties of the atomic cloud. An overview of these systems will be presented as well as their performance.

Apply to be
 considered for a student
   award (Yes / No)?

no

Level for award
 (Hons, MSc,
   PhD)?

MSc

Main supervisor (name and email)
and his / her institution

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Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

yes

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