

Manipulation of atomic density in a vapor cell using light-induced atomic Desorption

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In cold atom experiment, the laser requires to be stabilized at a specific frequency. This can be performed using saturated absorption spectroscopy in a vapor glass cell. Here, the atomic density inside the glass cell has to be high enough in order to extract the spectroscopic signal. One method to increase the atomic density inside the glass cell is via light-induced atomic desorption (LIAD). This can be performed by emitting light with more energy than the work function of the glass cell which allows atoms to be desorbed from the surface of the glass cell. This work demonstrates that atomic density in the glass cell is influenced by wavelength and emitting time of an external light source. The result will be further used for atomic spectroscopy measurement.

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