



Seminar

Thierry Lahaye
(ENS Paris)

Evaporative cooling of a magnetically guided atomic beam

In this talk, I will report on our recent progress in the manipulation and cooling of a magnetically guided, high flux beam of ^{87}Rb atoms.

Typically $7 \cdot 10^9$ atoms per second propagate in a magnetic guide providing a transverse gradient of $800 \sim \text{G/cm}$, with a temperature $\sim 550 \mu\text{K}$, at an initial velocity of 90 cm/s .

The atoms are subsequently slowed down to $\sim 60 \text{ cm/s}$ using an upward slope. The relatively high collision rate (5 s^{-1}) allows us to start forced evaporative cooling of the beam, leading to a reduction of the beam temperature by a factor of 4, and a ten-fold increase of the on-axis phase-space density.

Wann? Mittwoch, 26.10.2005, 10:00 Uhr

Wo? Universität Stuttgart, Raum 4.331