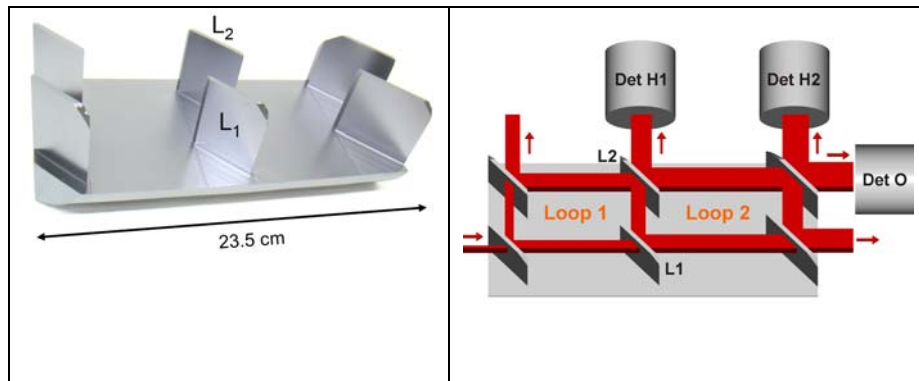


Call for a PhD thesis

Gravitational induced phases in neutron interferometry

The new generation of large-area perfect crystal interferometers opens, due to their extreme angular and phase sensitivity, new applications in fundamental physics. A main feature of crystal interferometers is their large beam separation and accordingly large sensitivity to micro-differences in the levelling of interfering beams in Earth's gravitation field. The resulting gravitational induced phase shift (known as COW phase in literature) will be systematically exploited within this project. In addition, the extreme angular sensitivity of 10^{-6} s of arc enables the sensitive detection of hypothetical short-range interactions in the submicron range.



The currently largest perfect-crystal neutron interferometer with two interference loops [NIMA 2009 and 2010].

Required skills

- Crystal design and preparation
- Continue numerical simulations
- Perform experiments at the ILL-Grenoble, instrument S18

Job offer

3 years PhD position funded by FWF (www.fwf.ac.at)

Contact

M. Zawisky (project leader) and H. Abele (group leader)

zawisky@ati.ac.at

Tel: +43 1 58801 14170

Atominsttitut, Stadionallee 2, 1020 Vienna (station U3 Schlachthausgasse)