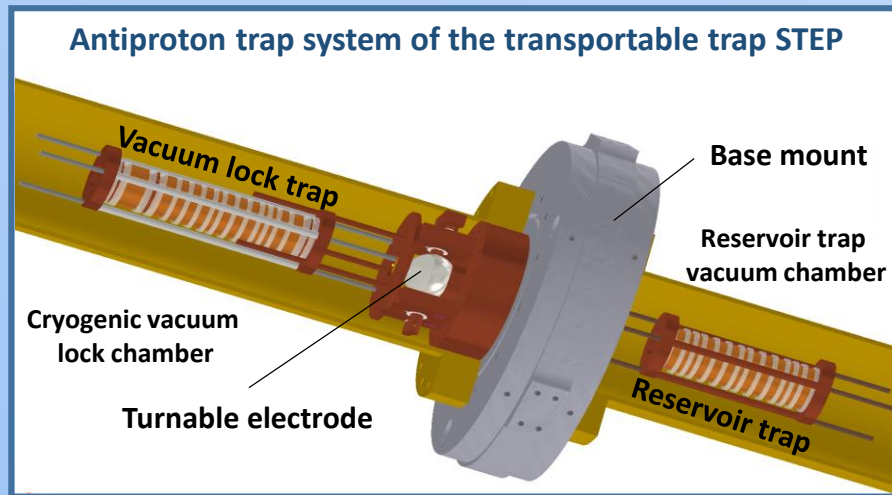


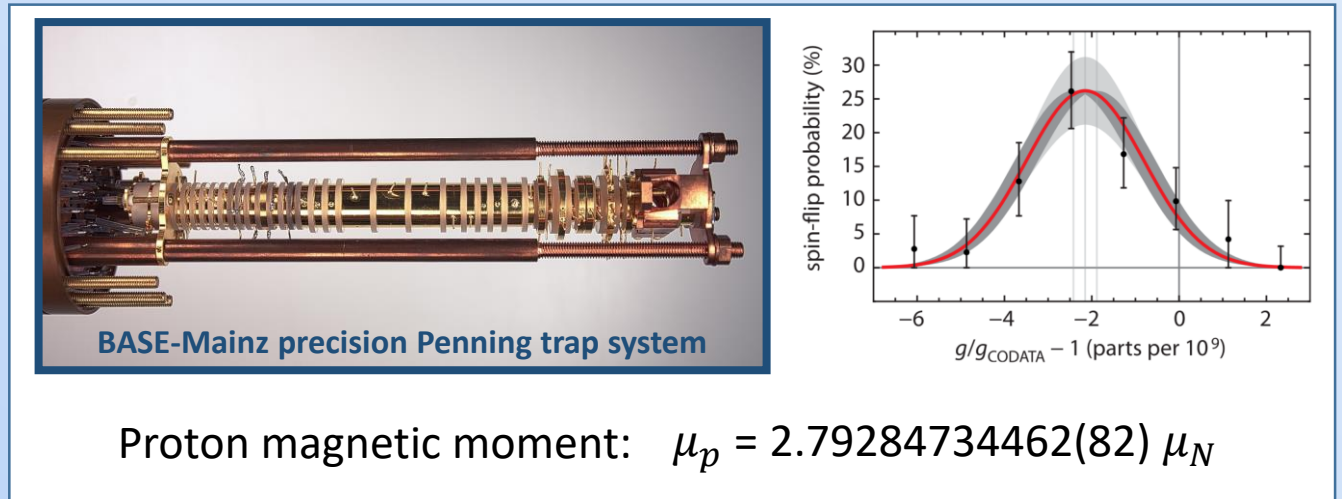
Who wants to get a world-record number into the CODATA fundamental constants?

The BASE-Mainz team is expanding and we are seeking to fill several positions until the end of the year. We hold the world record in the most precise measurement of the proton magnetic moment with 300 parts-per-trillion relative precision, see our [science publication](#). Further improvements in precision are required to provide stringent constraints in testing CPT invariance by comparing to antiproton precision measurements, and to test for beyond Standard Model physics effects.

Currently, we have funding for the development of sympathetic cooling methods for protons and antiprotons, and building a transportable antiproton trap to relocate antiproton measurements into a calm magnetic field environment for the next-generation of antiproton precision measurements. The developments are closely linked to the efforts of the BASE collaboration at CERN, which are summarized in our [collaboration proposal](#).



If you are interested or if you have questions regarding the application, please contact Dr. Christian Smorra, chsmorra@uni-mainz.de (Principal Investigator of the STEP and the BASE-Mainz team), Prof. Klaus Blaum, klaus.blaum@mpi-hd.mpg.de (Head of the Cold Stored Ions Division at MPI-K), or Dr. Stefan Ulmer Stefan.ulmer@cern.ch (Spokesperson of the BASE collaboration). We will require your CV, your credentials, and ideally two references for an application. Further details also on our homepage: <https://antimatter.physik.uni-mainz.de/>.



We would like to fill the following positions:

A **post-doctoral researcher position** associated with the Cold Stored Ions Division of the Max-Planck Institute for Nuclear Physics in Heidelberg, with the main working location in Mainz. The candidate is supposed to become the leader of the team working on the development of the proton sympathetic cooling methods and proton precision measurements.

A **PhD position** dedicated to develop the first transportable antiproton trap and perform the first precision measurements outside - CERN's antimatter factory, which is the world's only low-energy antiproton facility. The position is associated with the ERC Starting Grant STEP at the Johannes Gutenberg-University of Mainz.

A **PhD position** at the BASE-Mainz experiment with the goal to develop methods for improved proton magnetic moment measurements exploiting the newly developed sympathetic cooling methods. The position has Mainz as working place, but is associated with the Cold Stored Ions Division of the Max-Planck-Institute of Heidelberg, and the graduation takes place via the University of Heidelberg.

