

## Positronium 1S-2S spectroscopy

*Monday, September 15, 2014 11:30 AM (30 minutes)*

We report the status of our ongoing experiment at ETH Zurich (in collaboration with MPQ Garching and Marquette University) aiming to improve by a factor of 5 the current precision of the 1S-2S transition frequency of positronium. This will provide a stringent test of the QED calculations at the  $\alpha^7 m$  level. We will describe the details of the experimental setup and the first observation of the annihilations of Ps in the 2S state. We will also discuss the prospects of a further improvement of this measurement and of the 1S-2S transition interval of muonium.

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