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【365】 A positron trap for observing molecules containing positronium

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A positron trap is a powerful tool for performing experiments with positrons and positronium. This type of device can typically produce $\sim 10^5$ e^+ /s in bunches with a diameter of 1-2 mm and an energy spread of approximately 50 meV.

We aim to use these positron pulses to observe molecules containing positronium, such as PsH and PsO via collisions in gases such as methane and carbon dioxide. By using a high-mass resolution ion spectrometer to detect fragments from dissociation, precise measurement of their binding energy will be performed.

This poster will describe the positron beam, trap, and ion spectrometer and show first trapping results from the newly constructed positron beamline.

Theoretical Work

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