

Abstract Submitted  
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**Autoresonant-spectrometric determination of the residual gas composition in the ALPHA experiment apparatus**<sup>1</sup> MARCELO BAQUERO-RUIZ, ALPHA COLLABORATION — The ALPHA antihydrogen trapping apparatus uses a cryogenic vacuum system that allows us to work at very low pressures and neutral particle densities. Nevertheless, it has been seen that the few neutral gas particles remaining in the trap have a small but noticeable effect on some of our experiments. This makes it interesting for us to know the density and composition of the neutral particles. Here we report the implementation of a system for measuring the composition of the residual gas inside the apparatus based on autoresonant ion extraction from an electrostatic potential well. The system uses the setup already in place for the experiment and offers an effective and non-invasive way of measuring the substances present inside our apparatus.

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