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## The AMS-02 RICH detector: status, latest results, and physics prospects

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The Ring Imaging Cherenkov (RICH) detector aboard the Alpha Magnetic Spectrometer (AMS-02) has been operating successfully on the International Space Station since 2011. The RICH detector, based on a proximity focusing design, features a dual-radiator configuration with sodium fluoride tiles at the center surrounded by silica aero gel tiles, and a matrix of 680 multi-anode photomultiplier tubes. It achieves a velocity resolution of  $\Delta\beta/\beta \approx 1.2$  per-mil for protons with a charge resolution of  $\sim 0.3$  units. The velocity resolution improves with increasing charge.

In this contribution, we present the latest AMS results on light cosmic-ray isotope measurements obtained with RICH detector, with highlights on the recently published Li-6 and Li-7 spectra.

We will also present preliminary studies on beryllium isotopes, where the radioactive Be-10 can probe cosmic-ray confinement time. The extension of the isotopic separation to heavier species requires an improved mass resolution. In this physics context, current advancements in the RICH reconstruction algorithms and detector response calibration will be discussed.

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