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Precision measurement of the D0 mass CHERYL PAPPENHEIMER, University of Cincinnati, BABAR COLLABORATION — We report a high precision measurement of the D^0 mass using $D^{*+} \to D^0\pi^+, D^0 \to K^-K^-K^+\pi^+$ decays in data collected by the BABAR detector; the low Q-value of this decay gives us a strong control over the background and good resolution, in addition to minimizing systematic uncertainties. With a statistical uncertainty on the order of 50 keV and a total systematic uncertainty of approximately the same magnitude, which is dominated by the charged kaon mass uncertainty, our measurement will be more precise than the current world average, 1864.86 ± 0.13 MeV.

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