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Energy Calibration of Double Chooz Detector GUANG YANG, ANL/IIT — Reactor anti-neutrino oscillation experiment Double Chooz was designed to measure the mixing angle theta-13 with unprecedented sensitivity. The Double Chooz detector system consists of a main detector, an outer veto system and several calibration systems. The main detector has a cylindrical structure. It consists of the target vessel, a liquid scintillator loaded with Gd, surrounded by the gamma-catcher, a non-loaded liquid scintillator. A buffer region of non-scintillating liquid surrounds the gamma-catcher and serves to host 390 photomultiplier tubes and to decrease the level of accidental background. The Inner Veto region is outside the buffer, and the Outer Veto system covers all detector components. Far detector is operational and the near detector is under construction. The detector is calibrated with light sources, radioactive point sources, cosmics and natural radioactivity. In this presentation we will describe use of radioactive calibration sources and cross-checks performed with cosmics and natural radioactivity.

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