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P2.065 **Reactor spectral rate and shape measurement with the Double Chooz detectors**

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Recently, a new generation of reactor-based neutrino experiments, aiming to measure the θ_{13} mixing angle that characterizes the neutrino oscillation phenomena, was developed. For this purpose, the Double Chooz (DC) experiment is looking for the disappearance of electron antineutrinos emitted by the two 4.25 GWth Pressurized Water Reactor cores of the Chooz power plant in the French Ardennes. In this view, two identical electron antineutrinos detectors, designed to make use of the Inverse Beta Decay (IBD) reaction, are installed at different baselines from the reactor cores (~400m and ~1050m). For the first phase of the experiment, in which only the Far Detector (FD) was taking data, an electron antineutrino spectrum prediction, based on full simulations of the cores, was achieved. In 2014, the DC collaboration reported a distortion in the 4 to 6 MeV range of the IBD energy spectrum observed in the FD when compared to the prediction. This deviation from the flux prediction could not be explained by the θ_{13} driven oscillation, detector energy response issues nor unknown background source since it scales with the reactor thermal power. At the same time, the construction of the Near Detector was completed, allowing a more precise measurement of the reactor antineutrino spectrum and flux emitted by the cores. This poster presents the latest results of the DC experiment related to the shape and rate of the electron antineutrino measurement with both near and far detectors. A comparison of these spectra with the reactor-based model will be also presented and discussed.