

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 21.06.2012, 16¹⁵ Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

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Measuring θ_{13} with the reactor-neutrino experiment Double Chooz

The Double Chooz experiment aims to measure the last unknown neutrino mixing angle θ_{13} by searching for the disappearance of electron antineutrinos emitted by the Chooz nuclear power station (France) with two detectors at different baselines (400 m and 1.05 km). Systematic uncertainties are strongly suppressed by comparing the measurements of the two detectors. The far detector is taking regular data since April 2011, while the near detector is presently under construction. Data from 228 days of the far detector have been analyzed, and show an indication of reactor electron antineutrino disappearance consistent with neutrino oscillations. The best fit value is $\sin^2(2\theta_{13}) = 0.109 \pm 0.030$ (stat) ± 0.025 (syst). In this talk, the experimental concept, details of the neutrino oscillation analysis, and future prospects of Double Chooz will be presented.

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