RENO Double Chooz Daya Bay PRL 116, 061801 (2016) PRD 98, 12002 (2018) arXiv: 1901.09445 → ND Data → Data Accidental

Substitution Accidental Events / 0.2 MeV **No-oscillatted MC** 20000 Full uncertainty **Accidentals** Reactor uncertainty Entries / 250 keV 10000 Events / 0.25 MeV 4 5 6 E_p (MeV) 15000 **Fast Neutrons** - ILL+Vogel Near 10³ • Data ¬ MC 10000 (Data-MC)/MC Integrated 10² 5000 Double Chooz IV: Near (258 live-days) Ratio to Prediction (Huber + Mueller) $E_{\rm p}$ (MeV) 15 10 Visible Energy (MeV) Fast neutron (b) Accidental

Substitute of the Events / 0.2 MeV oscillation prediction 0.9 1000 2 3 4 5 6 7 8 E_p (MeV) Far • Data χ^2 contribution ($\widetilde{\chi}_{_{\mathrm{I}}}$) χ^2 / DoF = 182 / 112 **™** MC (Data-MC)/MC **Double Chooz IV** Near (258 live-days) $E_{\rm p}$ (MeV) Prompt Energy (MeV) Visible Energy (MeV)