



**Tuesday, 16 July 2013 at 16:00 c.t.**  
**Seminar room 0815, 8th floor, physics highrise**

## Recent Developments in Models for Neutrino Masses and Mixings

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### Abstract

We discuss new developments towards the construction of models for neutrino masses and mixings in the context of Grand Unified Theories (GUTs). We review the situation after the Daya Bay experiment has measured the last unknown mixing angle,  $\theta_{13}^{PMNS}$ , and discuss possibilities for explaining the observed value in flavour models. As an explicit example, we present a recently constructed GUT flavour model. The model has 14 parameters and fits the 18 measured quark and lepton flavour observables with a  $\chi^2/\text{d.o.f.}$  of 2.0. From a Markov Chain Monte Carlo analysis we have derived the highest posterior density  $1\sigma$  intervals for all parameters and observables. With 14 parameters and 18 measured observables plus the currently unmeasured leptonic Dirac CP phase and one Majorana phase, the model features 6 predictions. This will allow to test the model with the forthcoming results of present and future experiments.