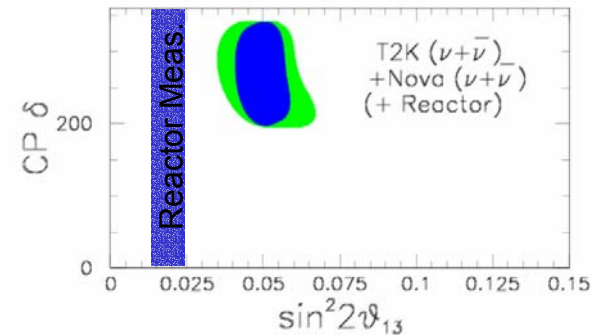


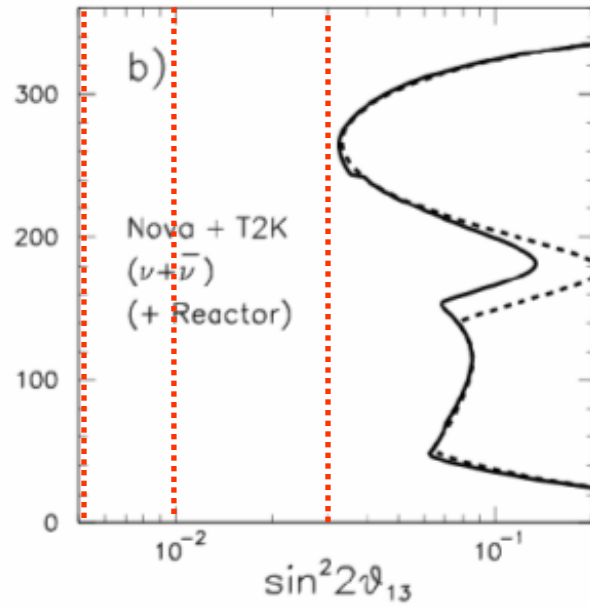
The Importance of θ_{13}

- Need section on theoretical/phenomenological importance of θ_{13} (and θ_{23})
 - Want to relate quark (CKM) and lepton (MNS) matrix
 - textures, GUTs, see-saw mechanism
 - ⇒ Claim is that θ_{13} cannot be too small or becomes difficult
 - Measuring θ_{13} effects in different processes can test if our mixing model is true
 - i. e. Does reactor measurement agree with θ_{13} found in LBL nu plus nubar
 - What would this mean?
 - Are there “unitarity tests” ?
 - Input to other studies
 - i. e. $\mu \rightarrow e \gamma$ can probe SUSY with sensitivity greater than LHC depending on θ_{13}
 - Impact on double beta decay and Tritium decay
 - In many, GUT model (in higher dimensions), θ_{13} sets the size of the mass matrix and the size of CP violation

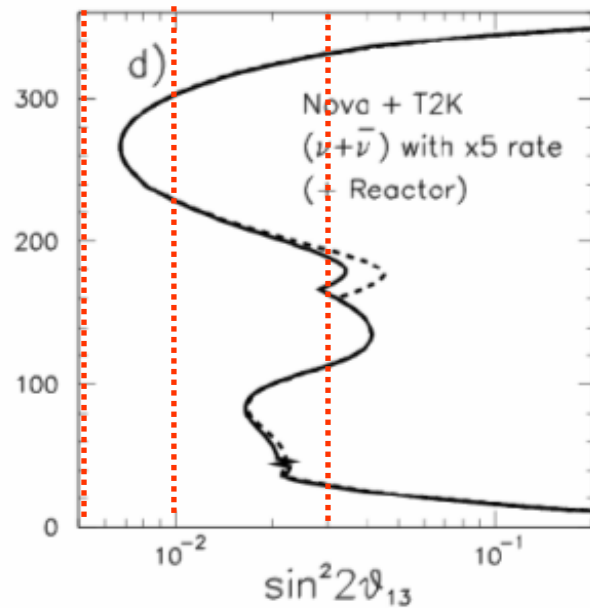


⇒ **And probably many more examples**

Two Sigma $\delta\text{CP}=0$ Excluded Regions



Nominal
Beam Rates



x5 Nominal
Beam Rates

Two Sigma Regions for Mass Hier.

