

Theory questions within the PMNS framework

If these should be covered by WG1 rather than WG5, that's fine. That just wasn't my original understanding.

1. What are the theoretical predictions for mass ordering, θ_{23} octant and CP violation phase?
2. What are the theoretical implications of a measurement of the normal ordering and a measurement of the inverted ordering?
3. What are the prospects for neutrinoless double decay if there strong evidence favoring the hierarchical normal ordering?
4. In the absence of neutrinoless double beta decay, is there anything of theoretical interest that neutrinoless double beta decay experiments can tell us?
5. What theoretical motivation for precision and required future precision is there for the six oscillation parameters (three angles, 1 phase, 2 mass differences)?
6. How theoretically robust are the upcoming cosmological measurements of the sum of neutrino masses and number of effective neutrino degrees of freedom? If they measure a sum of neutrino masses less than 110 meV, can we assume the normal hierarchy?
7. What do texture zeros and other matrix assumptions at the GUT scale tell us about low energy neutrino phenomenology? Given oscillation parameters, can we work backwards to tell us anything about fundamental neutrino theory?
8. What possible connections are there between the PMNS matrix and the CKM matrix?
9. Is there any difference in understanding the three-neutrino oscillation parameters between the case where neutrinos are Dirac and neutrinos are Majorana.
10. Lincoln Wolfenstein said, "We have 1000 neutrino theories which is like having no neutrino theory." Is this a valid concern?