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# Quantum Simulation of Entangled Oscillating Neutrinos.

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Two and three flavor oscillating neutrinos are shown to exhibit the properties bipartite and tripartite quantum entanglement respectively. The two and three flavour neutrinos are mapped to qubit states used in quantum information theory. Such quantum bits of the neutrino state can be encoded on a IBMQ computer using quantum computing as a tool. We construct a 3x3 PMNS (Pontecorvo-Maki-Nakagawa-Sakita) unitary gate by identifying the rotation matrix in two flavor neutrino oscillations as a U3 universal quantum gate. By preparing the time evolution operation gate we outline the simulation of neutrino oscillation on a quantum computer. We suggest the implications of the implementation of entanglement in the neutrino system on the IBM quantum processor.

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