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Accelerator Neutrino Experiments: Current status of the neutrino sector and what we would like to learn from future experiments

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Accelerator neutrino experiments provide interesting opportunities to probe the neutrino sector in a way that compliments the results from nonaccelerator-based programs. Through the use of accelerators, it is possible to produce a beam of neutrinos whose propagation can be studied over a long baseline. By studying oscillation along this beam line, it is possible to produce measurements that might resolve the neutrino mass hierarchy and probe the differences between matter and antimatter. In this presentation, the current constraints on the neutrino mixing from the Fermilab accelerator neutrino program will be discussed. These results will then be contrasted against the expectations for the next generation of neutrino accelerator experiments, such as NOvA and T2K.