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Neutrino mass constraints from cosmology

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Growth of structure in the universe depends sensitively on whether neutrinos have mass. As a result observations of large scale structure can probe total mass of all neutrino species. A combination of current cosmic microwave background anisotropy and large scale structure measurements provides neutrino mass limits that are already comparable or tighter than direct neutrino mass measurements. These constraints will be further improved in the near future. In combination with other neutrino experiments one can address the questions of neutrino mass degeneracy and existence of a fourth massive neutrino family.

In collaboration with SDSS.