1119-18-255 **Meng Cheng*** (mcheng@microsoft.com), Elings Hall CNSI Bldg. Rm. 2235, UCSB, Santa Barbara, CA 93106. *Aspects of symmetries in three-dimensional topological phases of matter.*

Two-dimensional topological phases are described by modular tensor categories and the presence of global symmetries leads to the notion of symmetry-enriched topological phases, which can be mathematically described by G-crossed braided tensor categories. I will generalize some of the notions, in particular symmetry fractionalization, to three-dimensional Z_2 topological phases, where there are both point-like quasiparticle excitations and line-like loop excitations. I will propose a partial classification of symmetry actions on the loop excitations. (Received February 16, 2016)