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Proton decay amplitudes at the physical point with chirally symmetric quarks

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Proton decay is a long-sought manifestation of baryon number violation predicted by Grand Unification and expected due to baryon asymmetry of the Universe. Amplitudes of such decay in various channels depend on proton structure determined by nonperturbative QCD dynamics and have to be determined on a lattice. We report results of a recent calculation of these amplitudes using chirally symmetric quark action at the physical pion mass. While our lattices relatively coarse (a=0.2 and 0.14 fm), we don't observe any significant lattice spacing dependence.

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