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Saving protons (and SUSY) with flavor symmetry

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PeV-scale supersymmetry is an attractive framework that can address the origin of dark matter, scale hierarchy and coupling unification.
However, the sparticles mediate baryon number violation caused by higher-dimensional operators, rendering the proton lifetime below the Super-Kamiokande limit.

We point out that flavor symmetry, originally introduced to explain the flavor structure of the Standard Model, can suppress proton decay, saving the PeV-scale SUSY scenario.
Conversely, the form of flavor symmetry may be probed through the proton lifetime and branching ratios.

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