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Alex McDonough* (amcd@math.brown.edu). *A Combinatorial Mapping for the Higher-Dimensional Matrix-Tree Theorem.*

For a natural class of matroids that are equipped with a multiplicity function, we provide a family of combinatorially meaningful maps from the sandpile group of a matroid to its bases such that the size of the preimage of every basis is its multiplicity squared. This generalizes a bijection given by Backman, Baker, and Yuen and extends work by Duval, Klivans, and Martin. Based on work from <https://arxiv.org/abs/2007.09501> (Received July 29, 2020)