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Stephen J. Young* (stephen.young@pnnl.gov), **Paul Bruillard** and **Kathleen Nowak**.
Enumeration of self-dual, multiplicity 1, fusion rings from a graphical perspective. Preliminary report.

We develop a method to associate a graphical structure with a self-dual, multiplicity 1, fusion ring. Using this graphical structure we can enumerate all such fusion rings with rank at most 8. We also provide a complete characterization of all such fusion rings where the graphical structure is triangle-free. Additionally, we produce a non-trivial infinite family of such fusion rings. Joint work with Paul Bruillard and Kathleen Nowak. (Received February 16, 2016)