Andrew Schopieray* (schopier@uoregon.edu), Department of Mathematics, Fenton Hall, University of Oregon, Eugene, OR 97403-1222. A classification of $\mathfrak{sl}_3$ relations in the Witt group of non-degenerate braided fusion categories. Preliminary report.

The Witt group of non-degenerate braided fusion categories provides an algebraic structure that is one of many tools for organizing braided fusion categories, while relations in this group give a promising method for constructing new examples of fusion categories. Relations between the classes of pseudo-unitary braided fusion categories $[C(\mathfrak{sl}_2, k)], k \geq 1$ have been completely described in the work of Davydov, Nikshych, and Ostrik. Here we give a complete classification of relations between the classes $[C(\mathfrak{sl}_3, k)], k \geq 1$ with a view toward extending these methods to arbitrary simple finite dimensional Lie algebras $\mathfrak{g}$ and positive integer levels $k$. (Received January 25, 2016)