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(paul.bruillard@pnnl.gov). *Rank 5 Premodular Categories*. Preliminary report.

In recent years, researchers have found it useful to classify fusion categories based on a numeric parameter known as their rank. Premodular categories are a class of fusion categories that are amenable to classification. However, they are degenerate to some degree and thus more difficult to understand than modular categories. Premodular categories have previously been classified through rank 4, while modular categories are completely classified through rank 5 and partially characterized through rank 11. In this talk we will survey a number of classification tools developed in recent years that exploit the degeneracy of a premodular category. We will discuss how these tools can be employed to classify pseudounitary rank 5 premodular categories up to Grothendieck equivalence. (Received September 19, 2016)