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**Yilong Wang\*** (yilongwang@lsu.edu). *Higher central charge and higher Gauss sum of premodular categories.*

The Gauss sum and the central charge of premodular categories are important categorical invariants. When the category is modular, these invariants provide important information of the associated Reshetikhin-Turaev TQFTs. We generalize the notions of central charge and Gauss sum, and derive interesting arithmetic properties of them under the action of the absolute Galois group. We will also discuss how these invariants change under de-equivariantization and the local module construction. This is a joint work with Siu-Hung Ng and Andrew Schopieray. (Received September 25, 2018)