1127-18-170   **Alexei Davydov*** (`davydov@ohio.edu`), Morton Hall, Ohio University, Athens, OH 45701.
Lagrangian correspondences between group-theoretical modular categories.

Group-theoretical modular categories is a class of modular categories for which Lagrangian algebras (or physical modular invariants) can be described effectively (in group-theoretical terms). This description is useful for applications in conformal field theory, allowing classification of full CFTs with given chiral halves being holomorphic orbifolds. In condensed matter physics it can be used to classify possible boson condensations. It also provides ways of studying braided equivalences between group-theoretical modular categories. The class of modular categories can be used to provide examples of counter-intuitive behaviour of modular invariants: multiple physical realisations of a given numerical modular invariant, non-physicality of some permutation modular invariants. The talk will try to give an overview of known results and open problems. (Received February 02, 2017)