

1154-81-1261

Daniel S Freed* (dafr@math.utexas.edu), The University of Texas at Austin, Mathematics Dept. RLM 8.100, 2515 Speedway Stop C1200, Austin, TX 78712. *Gapped boundary theories in three dimensions*. Preliminary report.

In various situations one often says that a particular physical material is forced to have gapless, or propagating, modes on its boundary, and this is an important feature for applications. In joint work with Constantin Teleman we extract a mathematical theorem for certain 2+1 dimensional (interacting) systems which tells conditions under which gapless boundary modes are forced. The setting for our work is topological field theory, and we lean heavily on the algebra of tensor categories. In this talk I will explain the background and a bit about the techniques used in the proof. (Received September 14, 2019)