Meeting: 1000, Albuquerque, New Mexico, SS 14A, Special Session on Braids and Knots

1000-20-223   **Imre Tuba*** (`ituba@math.vt.edu`), Department of Mathematics (0123), Virginia Tech, Blacksburg, VA 24061-0123. *Braid representations and braided tensor categories.* Preliminary report.

This talk is about the connection between braid representations and braided semisimple tensor categories. Semisimple tensor categories whose Grothendieck semiring is isomorphic to that of the representation category of a semisimple Lie algebra are of great interest in quantum mechanics. Under suitable conditions such categories can be characterized by their endomorphism algebras. When the category is braided, representations of the braid group naturally arise in these endomorphism algebras. An understanding of this family of braid representations along with how its parameters appear as categorical invariants can therefore lead to a characterization of the entire tensor category. (Received August 25, 2004)