

Meeting: 1003, Atlanta, Georgia, SS 15A, AMS Special Session on Quantum Topology, I

1003-57-1379 **Kazuo Habiro*** (habiro@kurims.kyoto-u.ac.jp), Research Institute for Mathematical Sciences, Kyoto University, Kitashirakawa, Sakyo-ku, 606-8502 Kyoto, Japan. *Category of bottom tangles in handlebodies and functorial universal invariants.*

I will talk about a category B whose objects are the nonnegative integers and whose morphisms from m to n are a certain kind of tangles, which I call bottom tangles, of n components in a standard handlebody of genus m . Via a natural faithful functor, we can regard B as a braided subcategory of the category C of cobordisms of connected, oriented surfaces with circle boundary, introduced by L. Crane and D. Yetter and by T. Kerler. The braided Hopf algebra structure in C is contained in B .

I will also talk about a functorial universal invariant J of tangles in B associated to each ribbon Hopf algebra H . J is a braided functor from B into the category of left H -modules, and maps the braided Hopf algebra structure in B into the transmutation H . (Received October 05, 2004)