1033-19-187   **Nick Gurski*** (`michaeln.gurski@yale.edu`), Yale University, 10 Hillhouse Ave., P.O. Box 208283, New Haven, CT 06520-8283. *Loop spaces and coherence for braided monoidal bicategories.* Preliminary report.

A standard interpretation of the coherence theorem for braided monoidal categories is the following. Any two morphisms with the same source and target constructed from unit and associativity isomorphisms as well as the braid isomorphism are equal if and only if they have the same underlying topological braid. This reduces a problem in algebra to a problem in topology. Here I discuss progress made towards a similar solution for braided monoidal bicategories. The key step is to give the fundamental 2-groupoid of an algebra over the little 2-cubes operad the structure of a braided monoidal bicategory, and then to show that the free such structure on one object is appropriately equivalent to a disjoint union of bicategories obtained by taking the fundamental 2-groupoids of particular configuration spaces. (Received September 10, 2007)