1007-20-162   **Ilya Kapovich*** (`kapovich@math.uiuc.edu`), UIUC Department of Mathematics, 1409 West Green Street, Urbana, IL 61801. *The intersection form and geodesic currents on free groups.*

The notion of a geometric intersection number between free homotopy classes of closed curves on surfaces plays a pivital role in Thurston's treatment of the Teichmuller space. In particular, Bonahon proved that this notion extends to a symmetric and bilinear notion of intersection number between two geodesic currents on a hyperbolic surface. We investigate to what extend these ideas are applicable in the free group context. Thus we study an $Out(F_n)$-equivariant "intersection form" on the product of the (non-projectivized) Culler-Vogtmann outer space and the space of geodesic currents on a free group. We also find an obstruction, arising from the non-symmetric behavior of some ergodic-theoretic invariants of automorphisms, to the existence of a symmetric notion of an intersection number between two geodesic currents on a free group. (Received February 19, 2005)