1056-57-218   **Chia-Yen Tsai*** (`ctsai6@math.uiuc.edu`), University of Illinois at Urbana-Champaign, Department of Mathematics, 1409 West Green Street, Urbana, IL 61801. *The most interesting surface homeomorphisms.*

One way to study non-Euclidean geometry is to understand homeomorphisms of a surface S onto itself. Among surface homeomorphisms, the most interesting ones are pseudo-Anosov which have the behavior of expanding S in one direction and contracting in a complementary direction by the same amount. We study how pseudo-Anosov maps behave when we change the topology of S. On the one hand, we can analyze the minimal length distortion of S if S is attached a Riemannian matric. On the other hand, we can study the infimum distortion of the combinatorial structure of S. (Received September 22, 2009)