

Geometry, Groups and Dynamics/GEAR Seminar
(held at the Illinois hub of GEAR)

Thursday, January 22, 2015, 1:00 pm in 243 Altgeld Hall

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Constructing surface homeomorphisms with given stretching factors

Abstract: Homeomorphisms from a compact surface to itself were classified by Thurston, and he associated to each such map an algebraic integer, called the dilatation - or the stretching factor. The question of which numbers can be realized as the dilatation of a pseudo-Anosov surface homeomorphism has a long history. A well-known necessary condition is that the number must be strictly greater in absolute value than all its Galois conjugates. We give a sufficient conditions for an algebraic number to be a pseudo-Anosov dilatation of a compact surface and describe an explicit construction of the surface and the map when this condition is met.

[Video](#)