臨時松江セミナーのご案内

日時: 2014年7月28日(月) 15:00~16:00 場所: 総合理工学部3号館6階第1演習室

講演者: Ara Basmajian, City University of New York 講演題目: Identities on hyperbolic surfaces

アブストラクト:

An *identity on a hyperbolic surface* is an equation which relates a sum with a geometric or topological invariant of the surface. The index set of the sum is (often) a particular set of geodesics, and the terms of the sum only depend on the length of the geodesic being summed over. These equations are independent of the choice of hyperbolic structure on the underlying surface hence justifying the term *identity*.

An example of such an identity (which appeared in [1]) is,

Theorem 1. Let S be a compact hyperbolic surface with non-empty geodesic boundary ∂S . Then

$$\ell(\partial S) = \sum_{h \in L_S} 2\log\left(\coth\frac{\ell(h)}{2}\right) ([1])$$

where L_S is the set of orthogeodesics- geodesic paths orthogonal to ∂S at both endpoints.

There are many other such identities due to McShane, Bowditch, Luo-Tan, Bridgeman, Calegari, Mirzakhani, and others. In this talk we discuss work in progress with Hugo Parlier and Ser Peow Tan on continuous families of identities.

References

 Basmajian, A. The orthogonal spectrum of a hyperbolic manifold, American Journal of Mathematics, 115, 5, Oct. 1993, 1139-1159.