

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

**Tuesday, April 7, 2015, 1:00 pm in 243 Altgeld Hall**

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**Marked length rigidity for NPC Euclidean cone metrics**

Abstract: Otal proved that for negatively curved Riemannian metrics on compact surfaces, the marked length spectrum---the function which assigns the length of the geodesic representative to each homotopy class of curves---determines the metric up to isometry homotopic to the identity. This was extended to nonpositively curved (NPC) Riemannian metrics by Croke-Fathi-Feldman, and to negatively curved cone metrics by Hersch-Paulin. In his thesis, Frazier considered the case of NPC Euclidean cone metrics, and showed that the marked length spectrum distinguishes such metrics from the classes above, but was unable to prove that they could be distinguished by such from each other. In joint work with Anja Bankovic, we prove that NPC Euclidean cone metrics are determined by their marked length spectrum. From the proof, we conjecture that they are (almost) determined by a much coarser invariant, namely the support of the associated Liouville current. I'll explain all the terms and sketch the relatively short proof.

[Video](#)