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F. T. Farrell and **J.-F. Lafont*** (jlafont@math.ohio-state.edu). *Marked length spectrum and diffeomorphism type.*

I will discuss examples of pairs of aspherical smooth manifolds having the same marked length spectrum, but having the property that the isomorphism of fundamental groups cannot be realized by any diffeomorphism between the manifolds. The examples are constructed via the Sunada method, and require finding Sunada pairs exhibiting certain specific cohomological properties. This is joint work with F. T. Farrell (Binghamton University). (Received August 25, 2009)