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Anja Bankovic* (bankovi1@illinois.edu), Department of Mathematics, 1409 W. Green Street, Urbana, IL 61801. *Horowitz-Randol phenomenon for q -differential metrics.*

In this talk we'll discuss length functions on a variety of spaces of metrics on a genus $g > 1$ surface. In particular, we will examine a phenomenon first observed by Horowitz and Randol that there are arbitrary large sets of homotopy classes of closed curves on a surface whose lengths are equal in every hyperbolic metric. We will introduce a family of flat metrics and discuss this phenomenon on the subfamily of flat metrics coming from q -differentials. (Received August 30, 2012)