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)