1145-47-2290 **Mai Tran*** (mttran@albany.edu), 1400 Washington Avenue, Albany, NY 12222, and **Rongwei Yang** (ryang@albany.edu), 1400 Washington Avenue, Albany, NY 12222. *Non-Euclidean Metrics on the Resolvent Set.*

For a bounded linear operator A on a complex Hilbert space $\mathcal{H}$, the functions $g_x(z) = \|(A - z)^{-1}x\|^2$, where $x \in \mathcal{H}$ with $\|x\| = 1$, defines a family of non-Euclidean metrics on the resolvent set $\rho(A)$. Thus the arc length of a fixed circle $C \subset \rho(A)$ with respect to the metric g_x is dependent on the choice of x. This paper derives an integral equation for the extremal values of the arc length. If there exists a solution to the extremal equation, x, then it can be shown to have particular properties relating to A. In the case A is the unilateral shift operator on the Hardy space $\mathbf{H}^2(\mathbb{D})$, the paper proves that the arc length of C is maximal if and only if x is an inner function. This is the joint work with Rongwei Yang. (Received September 25, 2018)