1125-51-1958 **David A Herron*** (david.a.herron@uc.edu) and **Stephen M Buckley**. *Quasi-Hyperbolic Geodesics are Hyperbolic Quasi-Geodesics.* Preliminary report.

Each open connected planar region Ω with two or more boundary points carries a unique maximal constant curvature metric deemed its Poincaré hyperbolic metric, and the length distance induced on Ω gives rise to a non-Euclidean model of geometry called hyperbolic geometry in Ω. Understanding hyperbolic geometry has important consequences in complex analysis and dynamics, quasiconformal mapping theory, Teichmüller theory, and scores of other areas.

The hyperbolic metric is notoriously difficult to compute, and hyperbolic distances as well as hyperbolic geodesics are even harder to determine. Fortunately there is a substitute, the quasi-hyperbolic metric, and in many instances—*not* all—quasi-hyperbolic geometry is bi-Lipschitz equivalent to hyperbolic geometry. But, how similar are these geometries?

We explain our ideas which show that in *any* hyperbolic plane domain, the hyperbolic and quasi-hyperbolic quasi-geodesics are exactly the same curves. Our techniques permit us to establish the marvelous fact that these two geometries are simultaneously Gromov hyperbolic (or not). Nonetheless, there are some important differences. (Received September 19, 2016)