Ralph Morrison and Qingchun Ren* (qingchun@berkeley.edu). Algorithms for Mumford curves: period matrix and canonical embedding.

Mumford showed that Schottky subgroups of $PGL(2, K)$ give rise to certain curves, now called Mumford curves, over a non-Archimedean field $K$. Such curves are foundational to subjects dealing with non-Archimedean curves, including Berkovich theory and tropical geometry. We develop and implement numerical algorithms for Mumford curves. Our main algorithms include: approximating the period matrices of the Jacobians of Mumford curves; computing the Berkovich skeleta of the analytifications of such curves; and approximating points in canonical embeddings. (Received September 15, 2013)