

1096-14-1445

**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)