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Matthias J Wagner* (Matthias.Wagner@epfl.ch), DMA, EPFL, CH-1015 Lausanne, Switzerland. *Numerical Uniformization of hyperelliptic Curves.*

We consider a closed, hyperelliptic curve C defined by $w^2 = p(z)$. The goal is to represent C as the quotient of the hyperbolic plane by the action of a fuchsian group. First we determine the hyperbolic metric on C numerically by integrating the curvature equation $\Delta u = e^{2u}$. Then we use a relation between the hyperbolic metric and the uniformizing projective connection on C to calculate the so called accessory parameters. Once these are known, we obtain a uniformizing representation $\varrho : \pi_1(C) \longrightarrow PSL_2(\mathbb{R})$ by integrating a differential equation of the form $y'' + \frac{S}{2}y$ along representative elements of $\pi_1(C)$. (Received September 29, 2000)