Title. Tessellating the Klein combination locus of Bullett-Penrose-Lomonaco correspondences

Abstract. Correspondences are multivalued holomorphic dynamical systems capable of combining the behaviors of rational maps and Kleinian groups. They were first introduced in this way by S. Bullett and C. Penrose, who presented a family capable of realizing the mating between quadratic maps and the modular group. This family was further studied by the first author and L. Lomonaco, who showed that its connected locus, the modular Mandelbrot set, is dynamically homeomorphic to the Mendelbrot set. In this Bullett-Penrose-Lomonaco family of correspondences, the Klein combination locus is the set of all parameters for which the dynamics of the correspondence is "discrete". We investigate an analytic map between the Klein combination locus minus the modular Mandelbrot set and the upper half-plane which provides "dynamical coordinates" for the parameter space, in the spirit of Douady and Hubbard, and talk about the properties of the pull back of the tesselation induced by the modular group. This is joint work with Shaun Bullett, Luna Lomonaco, Arcelino Lobato do Nascimento, Pedro Ivan Suarez Navarro.