End invariant and Jorgensen's side parameter of the punctured torus groups

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Let QF be the quasifuchsian space of the once-punctured torus T, i.e., the space of quasiconformal deformations of a fuchsian representation. The end invariant of an element of QF is defined to be the pair of marked conformal structures on T induced on the quotient space of the domain of discontinuity by the Kleinian group obtained as the image of the element. The side parameter of QF is defined by T. Jorgensen by using the combinatorial structure of the Ford domain of the image of a quasifuchsian representation, which takes values in the square of the hyperbolic plane. Since the Teichmuller space of T is canonically identified with the hyperbolic plane, the two invariants can be compared with each other. The main result of the talk is that for each component of the two invariants, the Weil-Petersson distance between them are uniformly bounded on QF. Combining this with J. Brock's theorem, the volume of the convex core of a quasifuchsian punctured torus group is estimated by a combinatorial structure of the Ford domain of the group.

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