

CONFORMAL BOUNDARY AND ALMOST OPEN BALLS

TIMO TOSSAVAINEN

Abstract. We establish a generalization to an inequality that can be used to measure how badly the intersection of an open ball of the euclidean space with the conformal boundary, i.e. the metric boundary of a conformal deformation of the unit ball \mathbb{B}^n , fails to be open in the euclidean sense. As an application to this, we show among other things that every point of a conformal boundary can be approached along a euclidean geodesical arc in a bounded set with respect to the intrinsic metric of conformal boundary.

Mathematics subject classification (2000): 30C65.

Key words and phrases: Conformal boundary, density estimate, Hausdorff content, quasiconformal mapping.

REFERENCES

- [1] M. BONK AND P. KOSKELA, Conformal metrics and the size of boundary, American J. Math., 6 (2002) 1247–1287.
- [2] M. BONK, P. KOSKELA AND S. ROHDE, Conformal metrics on the unit ball in euclidean space, Proc. London Math. Soc. (3) 77 (1998) 635–664.
- [3] L. C. EVANS AND R. F. GARIEPY, Measure Theory and Fine Properties of Functions CRC Press, Boca Raton New York London Tokyo, 1992.
- [4] P. KOSKELA AND S. ROHDE, Hausdorff dimension and mean porosity, Math. Ann. (4) 309 (1998) 593–609.
- [5] P. KOSKELA AND T. TOSSAVAINEN, Pathwise connectivity of a conformal boundary, Bull. London Math. Soc., 35 (2003), 645–650.
- [6] C. A. ROGERS, Hausdorff Measures Cambridge University Press, London, 1970.
- [7] T. TOSSAVAINEN, On the connectivity properties of the ρ -boundary of the unit ball, Ann. Acad. Sci. Fenn. Math. Diss. **123** (2000).
- [8] J. VÄISÄLÄ, Lectures on n-dimensional Quasiconformal Mappings Lecture Notes in Math. 229, Springer-Verlag, 1971.