HAIRS OF A HIGHER-DIMENSIONAL ANALOGUE OF THE EXPONENTIAL FAMILY

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For an entire function f the Julia set J(f) of f is the set of all points in \mathbb{C} where the iterates f^k of f do not form a normal family in the sense of Montel. Devaney and Krych [DK84] showed that for the exponential family λe^z , where $0 < \lambda < 1/e$, the Julia set consists of uncountably many pairwise disjoint simple curves tending to ∞ . Viana [Vi88] proved that these curves are smooth. In this talk we consider a quasiregular counterpart of the exponential map, the so-called Zorich maps, and generalize Viana's result to these maps.

References

[DK84] R. L. Devaney, M. Krych, Dynamics of exp(z), Ergodic Theory & Dynam. Systems 4 (1984), 35-52.

[Vi88] M. Viana da Silva, The differentiability of the hairs of exp(Z), Procs. Amer. Math. Soc. 103 No. 4 (1988), 1179-1184.