

1047-30-389

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Convergence of backward-iteration sequences with bounded hyperbolic step in higher dimension. Preliminary report.

I consider a holomorphic self-map f of the unit ball in \mathbb{C}^N , of hyperbolic type (with a dilatation coefficient $c < 1$ at the Denjoy-Wolff point of f). I have shown that any backward-iteration sequence with bounded hyperbolic step must converge to some point on the boundary other than the Denjoy-Wolff point and stay in a Koranyi region. The proof is based on the multi-dimensional version of Julia's lemma. When $N = 1$ these limit points are known to be boundary repelling fixed points for f . For $N > 1$, I will discuss possible generalizations. (Received February 02, 2009)