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Backward iteration in the unit ball. Preliminary report.

I will consider holomorphic self-map f of the unit ball in \mathbb{C}^N . In the cases when f is elliptic or hyperbolic, I will show that a backward-iteration sequence for f with bounded hyperbolic step converges to some point on the boundary other than Denjoy-Wolff point. These points will be called boundary repelling fixed points (BRFPs) and will possess several nice properties. In particular, in the case when such points are isolated from other BRFPs, they will be completely characterized as limits of backward iteration sequences. It will be also possible to construct a (semi) conjugation to an automorphism of the ball. Unfortunately, unlike in one-dimensional case, not all BRFPs are isolated (a counterexample will be presented). Then I will describe some problems that arise in parabolic case. (Received August 03, 2010)