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Backward iteration in the unit ball. Preliminary report.

We will consider analytic self-maps f of the unit ball in \mathbb{C}^N . Many facts were established about such maps in the 1-dimensional case (i.e. for self-maps of the unit disk), and we will generalize some of them in higher dimension. In particular, in the case when f is hyperbolic, it will be shown that backward-iteration sequences with bounded hyperbolic step will converge to a point on the boundary. These points will be called boundary repelling fixed points and will possess several nice properties. We will construct a (semi) conjugation of f to an automorphism via an analytic intertwining map. Then the result will be improved (a better intertwining map found) under some additional assumption on f near the boundary repelling fixed point. (Received February 08, 2010)