

## On approximating curves associated with nonexpansive mappings

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### ABSTRACT.

Let  $X$  be a Banach space with metric  $d$ . Let  $T, N : X \rightarrow X$  be a strict  $d$ -contraction and a  $d$ -nonexpansive map, respectively. In this paper we investigate the properties of the approximating curve associated with  $T$  and  $N$ . Moreover, following [3], we consider the approximating curve associated with a holomorphic map  $f : B \rightarrow \alpha B$  and a  $\rho$ -nonexpansive map  $M : B \rightarrow B$ , where  $B$  is the open unit ball of a complex Hilbert space  $H$ ,  $\rho$  is the hyperbolic metric defined on  $B$  and  $0 \leq \alpha < 1$ . We give conditions on  $f$  and  $M$  for this curve to be injective, and we show that this curve is continuous.

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