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Title:

Contractions for the Hilbert Metric

Abstract: We consider a convex set in \mathbb{R}^n endowed with the Hilbert Metric and a transformation T of this set. We show that under certain geometric conditions on the T , this transformation contracts the metric above. As a consequence, we obtain hyperbolicity results for the family of maps $(x,y) \mapsto (y, a-x^2 + b y)$.