

Convexity of Momentum Maps: A Topological Analysis

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We extend the Local-to-Global-Principle used in the proof of convexity theorems for momentum maps to not necessarily closed maps $f: X \rightarrow Y$ whose target space Y carries a convexity structure which need not be based on a metric. Using a new factorization of f , convexity of its image is proved without local fiber connectedness, and for almost arbitrary spaces X . Geodesics are obtained by straightening rather than shortening of arcs, which allows a unified treatment and extension of previous convexity results.

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