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Sufficient Conditions for an Existence of a Solution to a Differential Inclusion

We formulate geometric conditions induced by the compact set $K \subset \mathbb{R}^{m\times n}$, which imply existence of a Lipschitz solution u to the differential inclusion $Du \in K$. The solutions are obtained using the convex integration method. We illustrate our result for the known example $K = SO(2) \cup SO(2)B$, where B is a 2×2 diagonal matrix with $\det B = 1$.