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The geometry of $C^1$ regular curves in sphere with constrained curvature. (English)
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Summary: In this article, we study $C^1$ regular curves in the 2-sphere that start and end at given points with given directions, whose tangent vectors are Lipschitz continuous, and their a.e. existing geodesic curvatures have essentially bounds in an open interval. Especially, we show that a $C^1$ regular curve is such a curve if and only if the infimum of its lower curvature and the supremum of its upper curvature are constrained in the same interval.

MSC:
53A04 Curves in Euclidean and related spaces
53C42 Differential geometry of immersions (minimal, prescribed curvature, tight, etc.)

Keywords:
$C^1$ regular curves; geometry; almost everywhere existing geodesic curvatures

Full Text: DOI

References:


[8] Saldanha, NC; Shapiro, BZ, Spaces of locally convex curves in $(S^n)$ and combinatorics of the group $\langle B_n^\ast \rangle$, J. Singul., 4, 1-22 (2012) · Zbl 1292.58002


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