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**New manifestations of the Darboux's rotation and translation fields of a surface.** (English)

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Summary: We show how the rotation and translation fields of a surface, introduced by Gaston Darboux, may be used to obtain short proofs of a well-known theorem (asserting that the total mean curvature of a surface is stationary under an infinitesimal bending) and a new theorem (asserting that every infinitesimal bending of any simply connected closed surface  $S \subset \mathbb{R}^3$  is orthogonal to  $S$  at least at two points).

**MSC:**

**53A05** Surfaces in Euclidean and related spaces

**53A04** Curves in Euclidean and related spaces

Cited in 1 Document

**Keywords:**

infinitesimal bending; simply connected surface; total mean curvature

**Full Text:** [Link](#) [arXiv](#)