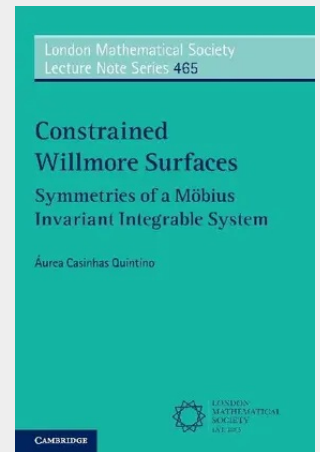


Constrained Willmore Surfaces

From Bäcklund to Darboux, this monograph presents a comprehensive journey through the transformation theory of constrained Willmore surfaces, a topic of great importance in modern differential geometry and, in particular, in the field of integrable systems in Riemannian geometry. The first book on this topic, it discusses in detail a spectral deformation, Bäcklund transformations and Darboux transformations, and proves that all these transformations preserve the existence of a conserved quantity, defining, in particular, transformations within the class of constant mean curvature surfaces in 3-dimensional space-forms, with, furthermore, preservation of both the space-form and the mean curvature, and bridging the gap between different approaches to the subject, classical and modern. Clearly written with extensive references, chapter introductions and self-contained accounts of the core topics, it is suitable for newcomers to the theory of constrained Willmore surfaces. Many detailed computations and new results unavailable elsewhere in the literature make it also an appealing reference for experts.

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104,70 €

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Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781108794428

Medium: Buch

ISBN: 978-1-108-79442-8

Verlag: Cambridge University Press

Erscheinungstermin: 10.06.2021

Sprache(n): Englisch

Auflage: Erscheinungsjahr 2021

Serie: London Mathematical Society
Lecture Note Series

Produktform: Kartoniert

Gewicht: 385 g

Seiten: 258

Format (B x H): 152 x 229 mm

