



## The Inverse Problem of the Calculus of Variations: Local and Global Theory (Hardback)

By -

Atlantis Press (Zeger Karssen), Netherlands, 2015. Hardback. Condition: New. 1st ed. 2015. Language: English . Brand New Book. The aim of the present book is to give a systematic treatment of the inverse problem of the calculus of variations, i.e. how to recognize whether a system of differential equations can be treated as a system for extremals of a variational functional (the Euler-Lagrange equations), using contemporary geometric methods. Selected applications in geometry, physics, optimal control, and general relativity are also considered. The book includes the following chapters: - Helmholtz conditions and the method of controlled Lagrangians (Bloch, Krupka, Zenkov) - The Sonin-Douglas s problem (Krupka) - Inverse variational problem and symmetry in action: The Ostrogradskyj relativistic third order dynamics (Matsyuk.) - Source forms and their variational completion (Voicu) - First-order variational sequences and the inverse problem of the calculus of variations (Urban, Volna) - The inverse problem of the calculus of variations on Grassmann fibrations (Urban).



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