An Introduction to Involutive Structures

Detailing the main methods in the theory of involutive systems of complex vector fields, this book examines the major results from the last 25 years in the subject. One of the key tools of the subject – the Baouendi–Treves approximation theorem – is proved for many function spaces. This in turn is applied to questions in partial differential equations and several complex variables. Many basic problems such as regularity, unique continuation and boundary behavior of the solutions are explored. The local solvability of systems of partial differential equations is studied in some detail. The book provides a solid background for beginners in the field and also contains a treatment of many recent results which will be of interest to researchers in the subject.

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