

Global Solutions to Cartan's Realization Problem

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We will describe a systematic method to solve a type of Cartan's realization problem. Our method builds upon a new theory of Lie algebroids and Lie groupoids with structure group and connection. This approach allows to find local as well as complete solutions, their symmetries, and to determine the moduli spaces of local and complete solutions. We illustrate our method with the problem of classification of extremal Kähler metrics on surfaces.

This is joint work with Rui Fernandes. The talk will be given in two parts.