Mathematics > Differential Geometry

Local Equivalence Problem for Sub-Riemannian Structures

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We solve the local equivalence problem for sub-Riemannian structures on (2n + 1)-dimensional manifolds. We show that two sub-Riemannian structures are locally equivalent if and only if? their corresponding canonical linear connections are equivalent. When n = 1, these connections coincide with the generalized Tanaka-Webster connection of the corresponding contact metric structure. We show that in dimension > 5, there may not be any contact metric manifolds associated with a given sub-Riemannian structure.

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