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Sub-Riemannian manifolds

Definition. Sub-Riemannian manifolds

A *sub-Riemannian manifold* is a triple (M, Δ, g), where M is a differentiable manifold, Δ is a bracket-generating distribution, and g is a smooth section of positive-definite quadratic forms on Δ. In fact, the map g can be considered as the restriction to Δ of a Riemannian metric tensor on the manifold M. A curve γ on M is called *admissible*, or *horizontal*, with respect to Δ if it is absolutely continuous and $\dot{\gamma}(t) \in \Delta_{\gamma(t)}$ for almost every t. Then the *sub-Riemannian distance* is defined by the same formula $(\star)$. More generally, if the length comes from a smoothly varying norm, then the distance is called *Carnot-Carathéodory metric* or *sub-Finsler*. Most of the previously mentioned results on the Heisenberg group will be valid for every Carnot-Carathéodory space.

Current note has 0 direct children and 0 total descendants.

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  - manifolds
    - Sub-Riemannian manifolds

And it has 20 siblings.

- structures based on sets
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    - Hermitian manifolds
    - Kahler manifolds
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    - smooth $\mathbb{R}$-manifold
    - Principal bundles over smooth manifolds
    - Manifold with a flow
    - $\mathbb{R}$-manifold group (Lie groups)
    - Homogeneous manifold
    - Finsler manifold
    - $\mathbb{R}$-manifold semi-Riemannian
    - Sub-Riemannian manifolds
    - $\mathbb{R}$-manifold Poisson
    - $\mathbb{R}$-manifold symplectic
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    - Spin $\mathbb{R}$-manifold
    - $\mathbb{R}$-manifold topological
    - Toric manifolds
    - Manifolds with compatible triples