Elements of Sub-Riemannian Geometry and its Applications

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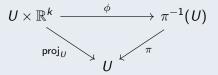


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Vector Bundle

Let E,M be two smooth manifolds. A map $\pi:E\to M$ is said to be a smooth vector bundle if it is a submersion, its fibers have the structure of finite dimensional vector spaces, and of every $p\in M$ there is an open neighborhood U of p and a diffeomorphism $\phi:U\times\mathbb{R}^k\to\pi^{-1}(U)$ such that the following diagram commutes



and the map $v \mapsto \phi(p, v)$ is a linear isomorphism between $\pi^{-1}(p)$ and \mathbb{R}^k .

Remark

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