Differential Geometry

Daniel Mao

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Chapter 1

Manifolds

1.1 Linear Manifolds

Proposition 1.1.1. Let \mathfrak{M} be a finite-dimensional linear manifold in a normed linear space \mathfrak{X} . Then \mathfrak{M} is closed.

Proposition 1.1.2. Let \mathfrak{X} be a normed linear space. Let \mathfrak{M} be a closed subspace of \mathfrak{X} . Let \mathfrak{Z} be a finite dimensional subspace of \mathfrak{X} . Then $\mathfrak{M} + \mathfrak{Z}$ is closed in \mathfrak{X} .