# LIE ALGEBRAS ON AFFINE SPACES

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We first explore the definition of an affine space which makes no reference to the underlying vector space and then formulate the notion of a Lie bracket and hence a Lie algebra on an affine space in this framework. Since an affine space has neither distinguished elements nor additive structure, the concepts of antisymmetry and Jacobi identity need to be modified. We provide suitable modifications and illustrate them by a number of examples from matrix algebra and geometry.