A representation of a Lie group (cf. Representation of a topological group) in an infinite-dimensional vector space. The theory of representations of Lie groups is part of the general theory of representations of topological groups. The specific features of Lie groups make it possible to employ analytical tools in this theory (in particular, infinitesimal methods), and also to considerably enlarge the class of "natural" group algebras (function algebras with respect to convolution, cf. Group algebra) spin representation of an infinite-dimensional orthogonal Lie algebra (sections 1 and 2) and a corresponding group (section 4). From this we deduce a construction of all level-one highest-weight representations of orthogonal affine Lie algebras in terms of creation and annihilation operators on an infinite-dimensional Grassmann algebra (section 3). We also give a similar construction of the level-one representations of the general linear affine Lie algebra in an infinite-dimensional "wedge space." Along these lines we construct the corresponding representations of the universe. The author presents a complete treatment of the subject, including general methods for constructing irreducible representations of infinite-dimensional groups and general results about such representations. He also exhibits deep relations between This text is devoted to representations of two classes of infinite-dimensional groups: current groups and diffeomorphism groups. The author presents a complete treatment of the subject, including general methods for constructing irreducible representations of infinite-dimensional groups and general results about such representations. He also exhibits On infinite-dimensional unitary representations of Kazhdan groups. Ask Question. The question might depend on which notion of local rigidity one uses in infinite-dimension, i.e. on which topology (or distance) one puts on the set of all bounded (actually, unitary) operators. I don't know if there is a standard accepted notion. I expect that there should be plenty of non-rigid representations but I don't know any example. A related question on non-rigidity in infinite dimension is here. A.A. Kirillov, A. A., Representation of the infinite dimensional unitary group, Dokl. Akad. Nauk. A. T. Ottesen, J. T., Infinite Dimensional Groups and Algebras in Quantum Physics, Springer-Verlag, Lecture Notes in Physics m 27, 1995. Google Scholar [Pa66]. R. S., Homotopy theory of infinite dimensional manifolds, Topology 5 (1966), 161–166. MathSciNet zbMATH CrossRef Google Scholar. [PS86]. A. and G. Segal, Loop Groups, Oxford University Press, Oxford, 1986. zbMATH Google Scholar.