

## Normal connections on three-dimensional manifolds with solvable transformation group

Mozhey N.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### Abstract

© 2016, Pleiades Publishing, Ltd. The purpose of the work is the classification of three-dimensional homogeneous spaces, allowing a normal connection, description of invariant affine connections on those spaces together with their curvature and torsion tensors, holonomy algebras. We consider only the case, when Lie group is solvable. The local classification of homogeneous spaces is equivalent to the description of the effective pairs of Lie algebras. We study the holonomy algebras of homogeneous spaces and find when the invariant connection is normal. Studies are based on the use of properties of the Lie algebras, Lie groups and homogeneous spaces and they mainly have local character.

<http://dx.doi.org/10.1134/S1995080216020116>

---

### Keywords

holonomy algebra, homogeneous space, Normal connection, transformation group