

Documents

Arias, F.A.^a, Malakhaltsev, M.^b

Topological and Differential Invariants of Singularities of Contact Structure on a Three-Dimensional Manifold

(2020) *Lobachevskii Journal of Mathematics*, 41 (12), pp. 2415-2426.

DOI: 10.1134/S1995080220120070

^a Universidad Tecnológica de Bolívar, Cartagena, 130012, Colombia

^b Departamento de Matemáticas, Facultad de Ciencias, Universidad de los Andes, Bogotá, 111711, Colombia

Abstract

Abstract: A contact structure on a three-dimensional manifold is a two-dimensional distribution on this manifold which satisfies the condition of complete non-integrability. If the distribution fails to satisfy this condition at points of some submanifold, we have a contact structure with singularities. The singularities of contact structures were studied by J. Martinet, B. Jakubczyk and M. Zhitomirskii. We consider a contact structure with singularities as a G-structure with singularities, we find some topological and differential invariants of singularities of contact structure and establish their relation to the invariants found by B. Jakubczyk and M. Zhitomirskii. © 2020, Pleiades Publishing, Ltd.

References

- Martinet, J.
Sur les singularités des formes différentielles
(1970) *Ann. Inst. Fourier (Grenoble)*, 20, pp. 95-178.
- Jakubczyk, B., Zhitomirskii, M.
Local reduction theorems and invariants for singular contact structures
(2001) *Ann. Inst. Fourier (Grenoble)*, 51, pp. 237-295.
- Arteaga, B.J.R., Malakhaltsev, M.A.
Symmetries of sub-Riemannian surfaces
(2011) *J. Geom. Phys.*, 61, pp. 290-308.
- Arias Amaya, F.A., Malakhaltsev, M.
Topological invariants of principal G-bundles with singularities
(2018) *Lobachevskii J. Math.*, 39, pp. 623-633.
- Kobayashi, S., Nomizu, K.
(1996) *Foundations of Differential Geometry, Wiley Classics Library*, 1.
(Wiley, New York,), Vol
- Montgomery, R.
A Tour of Subriemannian Geometries, Their Geodesics and Applications
(2002) *Of Mathematical Surveys and Monographs*, 91.
AMS, Providence

2-s2.0-85100539362
Document Type: Article
Publication Stage: Final
Source: Scopus

ELSEVIER

Copyright © 2023 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

 **RELX** Group™