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Topological and differential invariants of singularities of contact structure on a three-dimensional manifold

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Resumen

A contact structure on a $(2n + 1)$ -dimensional manifold M is a completely non-integrable $2n$ -dimensional distribution Δ . Locally a contact structure is determined by a nonvanishing 1-form ω such that $\Delta = \ker(\omega)$ and $\omega \wedge (d\omega)^n \neq 0$ (the condition of complete non-integrability). If for a $2n$ -dimensional distribution Δ on a $(2n + 1)$ -dimensional manifold M the condition of non-integrability does not hold at points of some submanifold $\Sigma \subset M$, we say that Δ is a contact structure with singularities. The contact structures with singularities were studied in [1] and [2], where the invariants of singularities were found.

In the present talk we will consider the contact structure with singularities as a G -structure with singularities [3] in case $n = 1$, that is $\dim M = 3$, $\dim \Delta = 2$, and the submanifold $\Sigma \subset M$ of singularities of Δ is 2-dimensional. We will explain how to find topological and differential invariants of singularities of contact structure and establish their relation to the invariants found in [1] and [2].

Palabras & frases claves: contact structure, G -structure with singularities.

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