

Borel theorem for CR-maps

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Following Henri Poincare, numerous results in Dynamics establish the curious phenomenon saying that two smooth objects (e.g. vector fields), which can be transformed into each other by means of a formal power series transformation, can be also transformed into each other by a smooth map. This is a kind of analogue of Borel Theorem on smooth realizations of formal power series. In CR-Geometry, similar phenomena hold for real-analytic CR-manifolds, and the usual outcome is that two formally equivalent CR-manifolds are also equivalent holomorphically. However, in our recent work with Shafikov [1] we proved that there exist real-analytic CR-manifolds, which are equivalent formally, but still not holomorphically. On the other hand, in our more recent work with Lamel and Stolovitch we prove that the following is true: if two 3-dimensional real-analytic CR-manifolds are equivalent formally, then they are C^∞ CR-equivalent. In this talk, I will outline the latter result.

References

- [1] I. Kossovskiy and R. Shafikov. *Divergent CR-equivalences and meromorphic differential equations*. To appear in J. Europ. Math. Soc. (JEMS). Available at <http://arxiv.org/abs/1309.6799>.