# Extending affine transverse structures with poles

Liliana Jurado Cerrón - Instituto de Matemática UFRJ

**Abstract**

We study holomorphic foliations with an affine homogeneus transverse structure and give a characterization of the case of transversely affine foliations in terms of matrix.

The work [1] the extension Lemma for the case of arbitrary codimension foliation, the author to prove the following result, generalizing the obtained in [2]

**Theorem 1.** *(Extension Lemma) Let $\mathcal{F}$ is a codimension-q singular foliation on $M$, $\Lambda$ is an analytic invariant irreducible subvariety of codimension q. Suppose:*

1. *$sing(\mathcal{F})\cap\Lambda$ is nonempty consists of type $I$ and type $II$ generic singularities.*
2. *There exists a differential 1-form $\eta$ defined in some neighborhood $V$ de $\Lambda$ minus $\Lambda$ and its local separatrices which defines a transverse affine structure for $\mathcal{F}$ in this set $V \setminus (\Lambda \cup sep(\Lambda))$.*

*Then $\eta$ extends meromorphically to a neighborhood of $\Lambda$ as an adapted form to $\Omega$ along $\Lambda$.*

Advisor: Bruno Scardua

# References

[1] Scárdua B., *On elementary integration and affine transverse structures for algebraic foliations of arbitrary codimension,* Arxiv:1411.0262, (2014).

[2] Scárdua B., Lins Neto. A., *Introdução á Teoria das Folheações Algébricas Complexas* Colóquios Brasileiros de Matemática, (1997).