

On the classification of generic germs of foliations in the complex plane

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In a joint work with L.Ortiz-Bobadilla y S.Voronin, we consider the class of germs of holomorphic vector fields in $(C^2, 0)$ with vanishing n -jet at the origin, $n > 1$ and the family of foliations generated by them. For generic germs we prove the existence of formal normal forms wich classify the formal and the analytic class of the foliations. These formal normal forms in the least degenerated case are analytical. For this analysis we consider the dicritic case (with infinite number of separatrices: see [1], [2]) and the nondicritic case (with a finite number of separatrices: see [3], [4]).

[1]. Ortiz-Bobadilla,L. Rosales-Gonzalez,E. Voronin, S.M., *Rigidity theorems for generic holomorphic germs of dicritic foliations and vector fields in $(C^2,0)$* , Mosc. Math. J. 5 (2005), no. 1, 171--206.

[2]. Ortiz-Bobadilla,L.; Rosales-Gonzalez,E.; Voronin, S., *Analytic normal forms of germs of holomorphic dicritic foliations.*, Moscow Math. Journal, V8, N3, pp 1-25 (2008).

[3]. Ortiz-Bobadilla L, Rosales Gonzalez E, Voronin S., Thom's problem for degenerated singular points of holomorphic foliations in the plane, MMJ,Moscow Mathematical Journal,internacional, 2012, V12, N4, pp 825-862

[4]. Ortiz-Bobadilla L., Rosales-González E., Voronin,S.M; *Formal and Analytic normal forms of germs of holomorphic nondicritic foliations.*