

NORMALIZATION OF POINCARÉ SINGULARITIES VIA VARIATION OF CONSTANTS

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Abstract

We present a geometric proof of the Poincaré-Dulac Normalization Theorem for analytic vector fields with singularities of Poincaré type. Our approach allows us to relate the size of the convergence domain of the linearizing transformation to the geometry of the complex foliation associated to the vector field.

A similar construction is considered in the case of linearization of maps in a neighborhood of a hyperbolic fixed point.

2000 *Mathematics Subject Classification*. Primary: 37C10, 37C05; Secondary: 34C20, 37C15.

Key words. Normalization vector fields, Siegel center problem.