

# STRONG UNIQUENESS IN THE CAUCHY PROBLEM FOR FINITE DEGENERACY TYPE VECTORS FIELDS

CAMILO CAMPANA

*camilo@dm.ufscar.br*

UFSCar

## Abstract

Consider the planar vector field

$$L = \partial/\partial t + a(x, t)\partial/\partial x$$

defined in a domain  $\Omega$  containing the origin of  $\mathbb{R}^2$ , where  $a(x, t)$  is a complex function of class  $C^1$  and the problem

$$\begin{cases} Lu = Au + B\bar{u} & \text{for } t > 0, \\ u(x, 0) = u_0(x), \end{cases} \quad (1)$$

where  $A, B \in L^p(\Omega)$ . One says that there is uniqueness in the local forward Cauchy problem for (1) if  $u_0 \equiv 0$  implies that  $u(x, t)$  vanishes identically on a neighborhood of the set  $\{t = 0\}$ . We will discuss the uniqueness in the Cauchy Problem for a class of local integrable complex vector fields with finite degeneracy type defined in the plane. This talk is based on the work [1].

Supported by FAPESP.

## References

- [1] C. CAMPANA AND J. HOUNIE, *Strong uniqueness results for first-order planar equations*, J. Differential Equations, 269, 7792–7824 (2020).