

**Bergamasco, Adalberto P.; da Silva, Paulo L. Dattori; Ebert, Marcelo R.**  
**Gevrey solvability near the characteristic set for a class of planar complex vector fields of infinite type.** (English) Zbl 1173.35300  
*J. Differ. Equations* 246, No. 4, 1673-1702 (2009).

The authors consider the complex vector field

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

defined in  $\Omega = (-\lambda, \lambda) \times S^1$ , where  $\lambda > 0$ , and  $S^1$  is the unit circle in the variable  $t$ . Under the assumption

$$(a + ib)(x) = x^n a_0(x) + ix^m b_0(x), \quad n, m \geq 1 \quad (a_0 + ib_0)(0) \neq 0,$$

with  $a_0(x)$  and  $b_0(x)$  in the Gevrey class  $G^s(-\lambda, \lambda)$ ,  $s \geq 1$ , the authors study the solvability of the equation  $Lu = f$  in Gevrey classes on  $\Omega$ . Detailed results are given, and several examples/counterexamples are provided, extending *A. P. Bergamasco* and *A. Mezzani* [*Ann. Inst. Fourier* 55, No. 1, 77–112 (2005; [Zbl 1063.35051](#))].

Reviewer: [Luigi Rodino \(Torino\)](#)

**MSC:**

**35A05** General existence and uniqueness theorems (PDE) (MSC2000)  
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Gevrey classes; complex vector fields; global solvability; semi-global solvability; Fourier series; Whitney extension

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