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A class of globally non-solvable involutive systems on the torus. (English) Zbl 1417.58016
J. Pseudo-Differ. Oper. Appl. 10, No. 2, 455-474 (2019).

Summary: We consider an involutive system associated with a smooth and closed 1-form defined on the n -dimensional torus. We show the non-global solvability of the system by assuming a certain geometric condition on the global primitive of the imaginary part of this 1-form. We use this result to characterize completely the global solvability of certain partially coupled systems.

MSC:

58J10 Differential complexes

35A01 Existence problems for PDEs: global existence, local existence, non-existence

35N10 Overdetermined systems of PDEs with variable coefficients

Cited in 1 Document

Keywords:

global solvability; complex vector fields; involutive systems; n -dimensional torus

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