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**On the global solvability for overdetermined systems.** (English) Zbl 1275.35004

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Summary: We consider a class of systems of two smooth vector fields on the 3-torus associated to a closed 1-form. We prove that the global solvability is completely determined by the connectedness of the sublevel and superlevel sets of a primitive of this 1-form in the minimal covering.

**MSC:**

- 35A01 Existence problems for PDEs: global existence, local existence, non-existence
- 35N10 Overdetermined systems of PDEs with variable coefficients
- 58J10 Differential complexes
- 35B10 Periodic solutions to PDEs
- 35F05 Linear first-order PDEs

Cited in 10 Documents

**Keywords:**

connected sublevels and superlevels; minimal covering; commensurable periods

**Full Text:** [DOI](#)

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