

Global Solvability for Overdetermined Systems in the 3-Torus - A Model Case

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In this talk we will discuss the global solvability of a system of two smooth vector fields on the three-dimensional torus associated to a closed 1-form b with commensurable periods.

We will show that, in a special situation, called *model case*, if some sub-level (or superlevel) of a primitive of b is not connected then we are able to construct smooth functions for which this system has no solution.