Global Regularity and Solvability for Vector Fields on S^3

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Abstract: In this talk, we discuss the problem of global regularity and global solvability for classes of smooth (non)singular tangential vector fields on sphere S^3. For a class of nonsingular vector fields which are invariant on the 2-dimensional torus $\mathbb{T}^2$, as fibers in "generalized solid tori" foliations of S^3, we describe completely the partial global hypoellipticity with respect to the torus and the global solvability on S^3.

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