

A CLASS OF FIRST ORDER LINEAR PARTIAL DIFFERENTIAL OPERATORS ON MANIFOLDS

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Let M be a connected C^∞ manifold, if M is embedded on \mathbb{R}^k we can produce a large class of functions $F = C^\infty(M, \mathbb{R})$ and operators on F . The objective of this talk is to present some results on existence of a class of first order linear differential operators on F and its properties. The operators will be related with smooth injective mappings defined on M . Results in collaboration with F. Braun, J. Hounie, M. Silva, J. Tavares and further investigations will support the assertions.

References

- [1] F. BRAUN AND J. R. DOS SANTOS FILHO, The real jacobian conjecture on \mathbb{R}^2 is true when one of the components has degree 3, *Discrete Contin. Dyn. Syst.*, **26**, p. 75-87, 2010.
- [2] J. HOUNIE AND J. R. DOS SANTOS FILHO, Well posed Cauchy problems for complex non-linear equations must be semilinear, *Math. Ann.*, **294**, 439-447, 1992.
- [3] J. R. DOS SANTOS FILHO, Injective Mappings and Solvable Vector Fields of Euclidean Spaces, *Topology Appl.*, **136**, 261-274, 2004.
- [4] J. R. DOS SANTOS FILHO AND M. F. DA SILVA, Global solvability for first order real linear partial differential operators , *J. Diff. Eqns.*, **247**, 2688-2704, 2009.
- [5] J. R. DOS SANTOS FILHO AND J. TAVARES, Injective mappings and Solvable Vector Fields , *An. Acad. Brasil. Ciênc.*, **82**, 1-5, 2010.

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