

First variation of the Hausdorff measure of non-horizontal submanifolds in sub-Riemannian stratified Lie groups

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Resumo/Abstract:

We determine necessary conditions for a non-horizontal submanifold of a sub-Riemannian stratified Lie group to be of minimal measure. We calculate the first variation of the measure for a non-horizontal submanifold and find that the minimality condition implies the tensor equation $H + \sigma = 0$, where H is analogous to the mean curvature and σ is the *mean torsion*. We also discuss new examples of minimal non-horizontal submanifolds in the Heisenberg group, in particular surfaces in the 5-dimensional Heisenberg group.

References

- [1] MARCOS M. DINIZ, MARIA R. B. SANTOS, JOSÉ M. M. VELOSO, *First variation of the Hausdorff measure of non-horizontal submanifolds in sub-Riemannian stratified Lie groups*, arXiv:1404.1432 [math.DG]