

MASTER THESIS PROJECT: HORIZONTAL IMMERSIONS INTO GOURSAT STRUCTURES.

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Quite a lot interest has been posed in Engel topology in the last two years. An old conjecture concerning the existence of Engel structures in a 4-fold has been proved [CPPP]. Moreover, a full h -principle for immersions of circles into an Engel manifold has been also discovered [PP]. A natural generalization of Engel structures is the class of Goursat distributions. The goal of this project is to generalize the previous result to prove an h -principle for horizontal immersions of circles into Goursat manifolds.

REFERENCES

- [CPPP] R. Casals, J.L. Pérez, A. del Pino, F. Presas. *Existence h -principle for Engel structures*. arXiv:1507.05342.
- [PP] A. del Pino, F. Presas, *Flexibility for tangent and transverse immersions in Engel manifolds*, arXiv:1609.09306.