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On the parametrization of level sets in the Heisenberg group

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We introduce novel equations, in the spirit of Young-Rough Path theory, that parametrize level sets of intrinsically regular maps on the Heisenberg group with values in the plane. These equations can be seen as a sub-Riemannian counterpart to classical ODEs arising from the implicit function theorem. We show that they enjoy all the natural well-posedness properties, thus allowing for a "good calculus" on nonsmooth level sets, e.g., measuring their length. Examples and recent progress towards the higher co-dimension case will be discussed. Joint work with V. Magnani and E. Stepanov.

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