
Detecting phase defaults of circle-valued maps

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Abstract

Life in Sobolev spaces of circle-valued maps u would be easy if it were possible to write every such u as $u = e^{i\varphi}$ with φ as smooth as u and controlled by u . Unfortunately this is not the case. I will present two techniques allowing to control the defaults. The one is the factorization method, inspired by null Lagrangian techniques and the theory of weighted Sobolev spaces. The other one is a PDEs flavor method. We will present applications to variational problems.

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