Branched Optimal Transport and Fractal Measures in Type-I Superconductors

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Keywords: Branched optimal transport, fractal measures, type-I superconductors.

In this talk I will introduce a branched transport problem with weakly imposed boundary conditions. This problem was first derived as a reduced model for pattern formation in type-I superconductors in [1]. For minima of the reduced model with weak boundary conditions, it is conjectured in [2] that the dimension of the boundary measure is non-integer. The conjecture was linked to local scaling laws in [5]. I will present some recent advances in solving this conjecture. This talked is based on some works with Michael Goldman, Melanie Koser and Felix Otto [3, 4].

References

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