

REGULARITY OF THE FREE BOUNDARY FOR THE TWO-PHASE BERNOULLI PROBLEM

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I will illustrate a recent result obtained in collaboration with L. Spolaor and B. Velichkov concerning the regularity of the free boundaries in the two phase Bernoulli problems. The new main point is the analysis of the free boundary close to branch points, where we show that it is given by the union of two \mathcal{C}^1 graphs. This completes the analysis started by Alt, Caffarelli, and Friedman in the 80s.