New solutions to a generalized Plateau problem

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Plateau problem is about finding a surface that spans a given boundary and has the minimal area. Precise formulation of the problem depends on the meaning of the words *surface*, *spans*, *boundary*, and *area*. I shall briefly describe the classical formulation given by Reifenberg and Almgren and also the more recent approaches suggested by David and by Harrison and Pugh. After that, I shall present a modified Almgren's construction which gives a general existence result for an abstract Plateau problem encompassing many different formulations.

This is an ongoing joint work with Yangqin Fang (AEI Potsdam-Golm), Xiangyu Liang (Université Claude Bernard Lyon 1), and Ulrich Menne (AEI Potsdam-Golm).

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