

Overdetermined elliptic problems and constant mean curvature surfaces

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Abstract

After recalling the classical result by J.Serrin on overdetermined elliptic problems and the one by A.D. Aleksandrov on constant mean curvature closed surfaces, we present recent results for both types of problems in the case of domains or surfaces inside cones. In particular we will discuss the relationships between the PDE and the geometric problem, as well as their connection with isoperimetric inequalities.