

Some results on geometric PDE's admiting isolated singularities of conical type

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Several geometric elliptic PDE's admit solutions with isolated singularities. Moreover, under certain hypothesis, such singularities can be characterized as the ones of *conical type*. For instance, that is the case of a class of solutions to Monge-Ampère equations whose graph is a surface of prescribed extrinsic curvature in a model space [2, 3]. In such a case, the limit tangent cone that the solution has at the singularity determines completly its behaviour close to the singularity. Something similar happens when we study the quasilinear PDE associated to space-like surfaces with prescribed mean curvature $H \neq 0$ in the Lorentz- Minkowski space. In this case it is known (cf. [1]) that isolated singularities are light-like and so the limit tangent cone at the singularity is the same, i.e. the null-cone, for all singular solutions. Therefore the classification results here will require the analysis of other geometrical data [4]. Although the nature of the PDE's involved in these problems is quite different, some approaches can be extended from one case to another. We will give an overview of some classification results in the topic and the techniques used in their proofs.

Referencias

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