Existence and extendibility of rotationally symmetric spacelike graphs with prescribed higher mean curvature function in Minkowski space

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Abstract.

In this talk I investigate the existence of rotationally symmetric entire spacelike graphs with prescribed k-th mean curvature function in Minkowski space $\mathbb{L}^{n+1}$. As a previous step, I analyse the associated homogeneous Dirichlet problem on a ball, which is not elliptic for $k > 1$, and then I prove that it is possible to extend the solutions. Moreover, a sufficient condition for uniqueness of these graphs is given. Finally, a brief comment is done for the same problems in the a little more difficult case of the Euclidean space $\mathbb{R}^{n+1}$.

These results are contained in [1].

References

[1] D. De la Fuente, A. Romero and P.J. Torres, Existence and extendibility of rotationally symmetric graphs with a prescribed higher mean curvature function in Euclidean and Minkowski spaces, *J. Math. Anal. Appl.*, **446** (2017), 1046–1059.