A STRONG MAXIMUM PRINCIPLE FOR WEAK SOLUTIONS OF QUASI-LINEAR ELLIPTIC EQUATIONS WITH APPLICATIONS TO LORENTZIAN AND RIEMANNIAN GEOMETRY

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ABSTRACT. The strong maximum principle is proved to hold for weak (in the sense of support functions) sub- and super-solutions to a class of quasi-linear elliptic equations that includes the mean curvature equation for C^0 spacelike hypersurfaces in a Lorentzian manifold. As one application a Lorentzian warped product splitting theorem is given.

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