

**On the curvatures of bounded complete spacelike hypersurfaces in the Lorentz-Minkowski space**

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**ABSTRACT**

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In this paper we characterize the spacelike hyperplanes in the Lorentz-Minkowski space  $\mathbf{L}^{n+1}$  as the only complete spacelike hypersurfaces with constant mean curvature which are bounded between two parallel spacelike hyperplanes. In the same way, we prove that the only complete spacelike hypersurfaces with constant mean curvature in  $\mathbf{L}^{n+1}$  which are bounded between two concentric hyperbolic spaces are the hyperbolic spaces. Finally, we obtain some a priori estimates for the higher order mean curvatures, the scalar curvature and the Ricci curvature of a complete spacelike hypersurface in  $\mathbf{L}^{n+1}$  which is bounded by a hyperbolic space. Our results will be an application of a maximum principle due to Omori and Yau, and of a generalization of it.

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