

# Uniqueness and non-existence results for spacelike hypersurfaces with constant mean curvature in

$$\mathbb{H}^n \times \mathbb{R}_1$$

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In this talk we present some uniqueness and non-existence results for complete spacelike hypersurfaces with constant mean curvature in the Lorentzian product space  $\mathbb{H}^n \times \mathbb{R}_1$ . In order to obtain our results we ask the normal hyperbolic angle of the hypersurface to be bounded in an appropriate way. We get our results as a consequence of the well known Omori-Yau generalized maximum principle for complete Riemannian manifolds.

On the other hand it is well known that a spacelike entire graph in  $\mathbb{H}^n \times \mathbb{R}_1$  is not necessarily complete. However, we are also able to state our results in terms of entire graphs. That is, we present non-parametric versions of our results.

This talk is part of joint work with Fernanda E. C. Camargo and Henrique F. de Lima.

I prefer a communication.

## References

- [1] A. L. Albuje, New examples of entire maximal graphs in  $\mathbb{H}^2 \times \mathbb{R}_1$ , *Differential Geom. Appl.* **26** (2008), 456–462.
- [2] A. L. Albuje, F. E. C. Camargo and H. F. de Lima, Complete spacelike hypersurfaces with constant mean curvature in  $-\mathbb{R} \times \mathbb{H}^n$ , *J. Math. Anal. Appl.* **368** (2010), 650–657.