

## New Characterizations for Hyperbolic Cylinders in Anti-de Sitter Spaces.

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### Abstract

We will talk about complete maximal spacelike hypersurfaces in anti-de Sitter space  $\mathbb{H}^{n+1}(c)$  with either constant scalar curvature or constant non-zero Gauss-Kronecker curvature. We characterize the hyperbolic cylinders  $\mathbb{H}^m(c_1) \times \mathbb{H}^{n-m}(c_2)$ ,  $1 \leq m \leq n-1$ , as the only such hypersurfaces with  $n-1$  principal curvatures with the same sign everywhere. In particular we prove that a complete maximal spacelike hypersurface in  $\mathbb{H}^{n+1}(c)$  with negative constant Gauss-Kronecker curvature is isometric to  $\mathbb{H}^1(c_1) \times \mathbb{H}^3(c_2)$ . This is a joint work with Luiz Amancio Machado de Sousa Jr and Bárbara Corominas Valerio.