

Constant mean curvature surfaces and parallel mean curvature surfaces in product manifolds

Benoît Daniel¹, Iury Domingos², Feliciano Vitório³

¹ Université de Lorraine

² Université de Lorraine and Universidade Federal de Alagoas

³ Universidade Federal de Alagoas

We classify constant mean curvature surfaces with constant intrinsic curvature in the product manifolds $\mathbb{S}^2 \times \mathbb{R}$ and $\mathbb{H}^2 \times \mathbb{R}$, where \mathbb{S}^2 and \mathbb{H}^2 denote respectively the constant curvature 2-sphere and the hyperbolic plane. As a consequence, using Torralbo and Urbano's correspondence, we classify parallel mean curvature surfaces with constant intrinsic curvature in $\mathbb{S}^2 \times \mathbb{S}^2$ and $\mathbb{H}^2 \times \mathbb{H}^2$.