Mazet, Laurent; Rodríguez, M. Magdalena; Rosenberg, Harold
Periodic constant mean curvature surfaces in $\mathbb{H}^2 \times \mathbb{R}$. (English) Zbl 1311.53008

The authors consider periodic surfaces in $\mathbb{H}^2 \times \mathbb{R}$, where $\mathbb{H}^2$ is the hyperbolic plane defined by the Poincaré disk model. Denoting $\mathcal{M} = \mathbb{H}^2 \times \mathbb{R}/G$, where $G$ is the discrete group of isometries of $\mathbb{H}^2 \times \mathbb{R}$ generated by horizontal translations along geodesics and/or a vertical translation, they prove an Alexandrov-type theorem for double periodic H-surfaces $\Sigma \subset \mathcal{M}$ (Theorem 3.1). Various examples of periodic minimal surfaces in $\mathbb{H}^2 \times \mathbb{R}$ are presented.

Reviewer: Dorin Andrica (Riyadh)

MSC:

53A10 Minimal surfaces in differential geometry, surfaces with prescribed mean curvature
49Q05 Minimal surfaces and optimization
53C42 Differential geometry of immersions (minimal, prescribed curvature, tight, etc.)
53C30 Differential geometry of homogeneous manifolds

Keywords:
constant mean curvature surfaces; minimal surfaces; periodic surfaces; Alexandrov problem; Alexandrov reflection technique

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