

# Constant mean curvature graphs with planar boundary in $\mathbb{H}^2 \times \mathbb{R}$

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A well known result for constant mean curvature graphs in  $M^2 \times \mathbb{R}$  states that for a regular bounded convex domain in  $\mathbb{H}^2$  with geodesic curvature of the boundary greater than  $2H$ , the Dirichlet problem of finding a cmc  $H$  graph over the domain has a unique solution for any continuous boundary data. In this talk we will see that by restricting ourselves to zero boundary data, we can relax the boundary conditions and prove existence of solutions even for some unbounded non convex domains.