Half-Space Theorems in $\mathbb{H}^n \times \mathbb{R}^\ell$

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Based on the equivalence between maximum principles and stochastically completeness, discovered by S. Pigola, M. Rigoli and A. Setti, we prove mean curvature estimates for stochastically complete immersed submanifolds of $\mathbb{H}^n \times \mathbb{R}^\ell$ subject to extrinsic bounds. As consequences of these estimates, we prove, under weaker hypotheses, various known "half-space theorems"of $\mathbb{H}^2 \times \mathbb{R}$. We also prove mean curvature estimates for stochastically complete immersed submanifolds of Hadamard manifolds bounded by wedges. This is part of a joint work with J.H.de Lira and A. Medeiros.