

# Rigidity of complete minimal submanifolds in a Hyperbolic space

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**Abstract.** We prove some gap theorem for complete immersed minimal submanifold of dimension no less than six or four, depending on the codimension, in a hyperbolic space  $\mathbb{H}^{n+m}(-1)$ . That is, we show that a high dimensional complete immersed minimal submanifold  $M$  in  $\mathbb{H}^{n+m}(-1)$  is totally geodesic if the  $L^d$  norm of  $|A|$ , for some  $d$ , on geodesic balls centered at some point  $p \in M$  has less than quadratic growth and if either  $\sup_{x \in M} |A|^2$  is not too large or the  $L^n$  norm of  $|A|$  on  $M$  is finite, where  $A$  is the second fundamental form of  $M$ .

## References

- [1] de Oliveira, Hudson Pina; Xia, Changyu. *Rigidity of complete minimal submanifolds in a hyperbolic space*. Manuscripta Math. 158 (2019), no. 1-2, 21–30.