

Poincaré Sobolev equations in the Hyperbolic space

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Abstract

We study the a priori estimates,existence/nonexistence of radial sign changing solution, and the Palais-Smale characterisation of the problem $-\Delta_{\mathbb{B}^N}u - \lambda u = |u|^{p-1}u, u \in H^1(\mathbb{B}^N)$ in the hyperbolic space \mathbb{B}^N where $1 < p \leq \frac{N+2}{N-2}$. We will also prove the existence of sign changing solution to the Hardy-Sobolev-Mazya equation and the critical Grushin problem.

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