

HYPERBOLIC BROWNIAN MOTION EXITING STRIPE

GRZEGORZ SERAFIN

The subject of our reaserch is the Brownian motion on the real hyperbolic space $\mathbb{H}^n = \{x \in \mathbb{R}^n : x_n > 0\}$. We consider sets of the form $D \times (0, \infty) \subset H^n$, where D is any Lipschitz domain in R^{n-1} . We define λ - Poisson kernel as a kernel solving new Dirichlet problem, which turns out to be closely related to Poisson kernel of the process with other drift. As an egzample we find uniform estimates of Poisson kernel and Green function of hyperbolic stripe $S_a = \{x \in H^n : x_1 \in (0, a)\}$.

REFERENCES

- [1] J. Małecki, G.Serafin Hitting hyperbolic half-space, volume 68 of *Cambridge Studies in Advanced Mathematics*. Demonstratio Mathematica, 45(2) 2012.
- [2] G.Serafin Potential theory o hyperbolic Brownian motion i a stripe, preprint 2013.