

The exceptional sets of the Drury Arveson space

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A classical theorem of Fatou [1] says that a function in the Hardy space of the disc has non tangential limits at almost every boundary point. Conversely for every compact set of Lebesgue measure zero in the boundary of the unit disc there exists a function in the Hardy space which fails to have non tangential limits exactly on this set. So we say that the exceptional sets are exactly the sets of Lebesgue measure zero.

In the unit ball of \mathbb{C}^n there are two (different) spaces which play the role of the Hardy space in the unit disc. One is the Hardy space of the ball and the other one is the Drury Arveson space. For the first one, exceptional sets in the sense of Fatou have been characterized by Koranyi [2].

In this talk we will give a characterization of the exceptional sets of the Drury Arveson space by introducing a new potential theory on the boundary of the unit ball in \mathbb{C}^n or equivalently in the Heisenberg group.

References

- [1] P. Fatou, (1906) Séries trigonométriques et séries de Taylor, Acta Mathematica, Acta Math. 30, 335-400,
- [2] A. Korányi, (1969). Harmonic Functions on Hermitian Hyperbolic Space. Transactions of the American Mathematical Society, 135, 507–516.