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论文

广义测不准关系与Reissner Nordstrom de Sitter黑洞熵

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摘要：

针对Reissner Nordstrom de Sitter时空背景，利用经广义测不准关系改进的薄层brick wall方法计算了黑洞熵。结果表明，由这种方法得到的黑洞熵上限与它的外视界和宇宙视界面积之和成正比，和人们预期的结果相符。从中揭示了黑洞 熵与视界面积之间的内在联系，也进一步表明了黑洞熵是视界面上量子态的熵，是一种量子效应。由广义测不准关系的引入看到，brick wall方法与引力场量子化可能存在着一些内在的联系。

关键词： Reissner Nordstrom de Sitter黑洞,视界,熵,测不准关系,薄层brick wall方法

分类号:

The Generalized Uncertainty Relation and the Entropy of Reissner nordstrom de Sitter Spacetime

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Abstract:

Thinking of Klein Gorden equation in Reissner Nordstrom de Sitter spacetime, the entropy is calculated by the improved brick wall method due to the generalized uncertainty relation. The entropy bound of this s ystem not only includes the contribution of the black hole horizon, but also includes the contribution of the cosmological horizon. It is found that there is an internal relation between the event horizon and the entropy. It is also apparent that the cut off in brick wall model is something related to the quantum the ory of gravity.

Keywords: Reissner Nordstrom de Sitter spacetime Event horizo n Entropy Generalized uncertainty relation Thin film brick wall method

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