

The effect of temperature on the size of the area law potential

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Abstract

We investigate the effect of temperature on the size of the area law potential of a two dimensional generalization of the Euler-Heisenberg potential. After implementing the usual exclusion procedure for the potential, we compute an exact solution for an arbitrary temperature. The solution is also displayed in the appropriate dimensionless form. This is the result of knowing the area law potential of the Euler-Heisenberg potential. After this, we investigate the effect of temperature on the vacuum expectation values of the two-dimensional generalization of the Euler-Heisenberg potential. We find that, although the area law potential is larger at higher temperature, there is no such effect.