

INDUCED VACUUM POLARIZATION OF SCALAR FIELD BY IMPENETRABLE MAGNETIC TUBE

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S u m m a r y

We investigate the influence of an external magnetic field in a tube on the vacuum of a massive charged scalar field for arbitrary space-time dimensions. The tube is considered impenetrable for the scalar field and obeys the Dirichlet boundary condition on the bounding surface. It was shown that, for a particular case of the $2 + 1$ -dimensional space-time, the induced vacuum energy of the scalar field outside the tube can be numerically calculated without regularization procedure. The dependences of the induced vacuum energy upon the distance from the tube at its various transversal radii are obtained.