



physics



Special Issue Reprint

Vacuum Fluctuations

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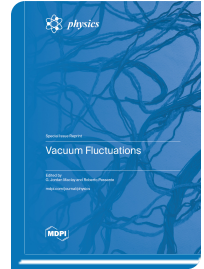
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ISBN 978-3-7258-1445-9 (Hardback)

ISBN 978-3-7258-1446-6 (PDF)



This reprint presents research on the expanding role of vacuum fluctuations in understanding microscopic and macroscopic physics. The effects of vacuum fluctuations on atoms, molecules, and nanoparticles are discussed. These effects include the static and dynamic Casimir effects, van der Waals forces, and radiative shifts. In the macroscopic area, virtual electron–positron pairs are linked to the permittivity and permeability of space itself, and vacuum energy is connected to the expansion of the universe. This reprint embraces the spectrum of effects that are related to vacuum fluctuations.



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