Abstract

Zeta Functions: Symmetry and Applications †

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A short summary of some symmetry properties of the Riemann zeta function and of different zeta functions corresponding to pseudodifferential operators will be given. An introduction to the main issues concerning the zeta-function regularization procedure will follow, with special emphasis on the rigor, power, and universality of the method, contrasting with the sloppy missuses of the same that have appeared too often in the literature. After that, applications of zeta-function regularization in quantum field theory and cosmology will be discussed, together with some important associated problems that can be dealt with by using this method.

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