Mathematics > Number Theory

Zeta-functions of weight lattices of compact semisimple connected Lie groups

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We define zeta-functions of weight lattices of compact semisimple connected Lie groups. If the group is simply-connected, these zeta-functions coincide with ordinary zeta-functions of root systems of associated Lie algebras. In this paper we consider the general connected (but not necessarily simply-connected) case, prove the explicit form of Witten's volume formulas for these zeta-functions, and further prove functional relations among them which include their volume formulas.

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