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Autore	Komori Yasushi
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Nota di contenuto	Introduction -- Fundamentals of the theory of Lie algebras and root systems -- Definitions and examples -- Values at positive even integer points -- Convex polytopes and the rationality -- The recursive structure -- The meromorphic continuation -- Functional relations (I) -- Functional relations (II) -- Poincar´e polynomials and values at integer points -- The case of the exceptional algebra G2 -- Applications to multiple zeta values (I) -- Applications to multiple zeta values (II) -- L-functions -- Zeta-functions of Lie groups -- Lattice sums of hyperplane arrangements -- Miscellaneous results.
Sommario/riassunto	The contents of this book was created by the authors as a simultaneous generalization of Witten zeta-functions, Mordell–Tornheim multiple zeta-functions, and Euler–Zagier multiple zeta-functions. Zeta-functions of root systems are defined by certain multiple series, given in terms of root systems. Therefore, they intrinsically have the action of associated Weyl groups. The exposition begins with a brief introduction to the theory of Lie algebras and root systems and then provides the definition of zeta-functions of root systems, explicit examples associated with various simple Lie algebras, meromorphic continuation

and recursive analytic structure described by Dynkin diagrams, special values at integer points, functional relations, and the background given by the action of Weyl groups. In particular, an explicit form of Witten's volume formula is provided. It is shown that various relations among special values of Euler–Zagier multiple zeta-functions—which usually are called multiple zeta values (MZVs) and are quite important in connection with Zagier's conjecture—are just special cases of various functional relations among zeta-functions of root systems. The authors further provide other applications to the theory of MZVs and also introduce generalizations with Dirichlet characters, and with certain congruence conditions. The book concludes with a brief description of other relevant topics.