

1. Record Nr.	UNINA9910960874803321
Autore	Brubaker Ben <1976->
Titolo	Weyl group multiple Dirichlet / / Ben Brubaker, Daniel Bump, and Solomon Friedberg
Pubbl/distr/stampa	Princeton, N.J., : Princeton University Press, c2011
ISBN	9786613013385 9781283013383 128301338X 9781400838998 1400838991
Edizione	[Course Book]
Descrizione fisica	1 online resource (173 p.)
Collana	Annals of mathematics studies ; ; no. 175
Altri autori (Persone)	BumpDaniel <1952-> FriedbergSolomon <1958->
Disciplina	515/.243
Soggetti	Dirichlet series Weyl groups
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front matter -- Contents -- Preface -- Chapter One. Type A Weyl Group Multiple Dirichlet Series -- Chapter Two. Crystals and Gelfand-Tsetlin Patterns -- Chapter Three. Duality -- Chapter Four. Whittaker Functions -- Chapter Five. Tokuyama's Theorem -- Chapter Six. Outline of the Proof -- Chapter Seven. Statement B Implies Statement A -- Chapter Eight. Cartoons -- Chapter Nine. Snakes -- Chapter Ten. Noncritical Resonances -- Chapter Eleven. Types -- Chapter Twelve. Knowability -- Chapter Thirteen. The Reduction to Statement D -- Chapter Fourteen. Statement E Implies Statement D -- Chapter Fifteen. Evaluation of $\zeta$ and $\eta$ , and Statement G -- Chapter Sixteen. Concurrence -- Chapter Seventeen. Conclusion of the Proof -- Chapter Eighteen. Statement B and Crystal Graphs -- Chapter Nineteen. Statement B and the Yang-Baxter Equation -- Chapter Twenty. Crystals and p-adic Integration -- Bibliography -- Notation -- Index
Sommario/riassunto	Weyl group multiple Dirichlet series are generalizations of the Riemann zeta function. Like the Riemann zeta function, they are Dirichlet series with analytic continuation and functional equations, having applications

to analytic number theory. By contrast, these Weyl group multiple Dirichlet series may be functions of several complex variables and their groups of functional equations may be arbitrary finite Weyl groups. Furthermore, their coefficients are multiplicative up to roots of unity, generalizing the notion of Euler products. This book proves foundational results about these series and develops their combinatorics. These interesting functions may be described as Whittaker coefficients of Eisenstein series on metaplectic groups, but this characterization doesn't readily lead to an explicit description of the coefficients. The coefficients may be expressed as sums over Kashiwara crystals, which are combinatorial analogs of characters of irreducible representations of Lie groups. For Cartan Type A, there are two distinguished descriptions, and if these are known to be equal, the analytic properties of the Dirichlet series follow. Proving the equality of the two combinatorial definitions of the Weyl group multiple Dirichlet series requires the comparison of two sums of products of Gauss sums over lattice points in polytopes. Through a series of surprising combinatorial reductions, this is accomplished. The book includes expository material about crystals, deformations of the Weyl character formula, and the Yang-Baxter equation.

---