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23. Other SL(n) Examples -- CHAPTER 24. An O(2n) Example -- CHAPTER 25. G2 Examples: the Overall Strategy -- CHAPTER 26. G2 Examples: Construction in Characteristic Two -- CHAPTER 27. G2 Examples: Construction in Odd Characteristic -- CHAPTER 28. The Situation over : Results -- CHAPTER 29. The Situation over : Questions -- CHAPTER 30. Appendix: Deligne's Fibre Functor -- Bibliography -- Index

Sommario/riassunto

Convolution and Equidistribution explores an important aspect of number theory--the theory of exponential sums over finite fields and their Mellin transforms--from a new, categorical point of view. The book presents fundamentally important results and a plethora of examples, opening up new directions in the subject. The finite-field Mellin transform (of a function on the multiplicative group of a finite field) is defined by summing that function against variable multiplicative characters. The basic question considered in the book is how the values of the Mellin transform are distributed (in a probabilistic sense), in cases where the input function is suitably algebro-geometric. This question is answered by the book's main theorem, using a mixture of geometric, categorical, and group-theoretic methods. By providing a new framework for studying Mellin transforms over finite fields, this book opens up a new way for researchers to further explore the subject.