

Contents

	page
[I] Number Theory And Automorphic Representations	1
[1.1] Some problems in classical number theory	1
[1.2] Modular forms and automorphic representations	3
[II] Selberg's Trace Formula	11
[2.1] Historical remarks	11
[2.2] Orbital integrals and Selberg's trace formula	12
[2.3] Three examples	17
[2.4] A necessary condition	19
[2.5] Generalizations and applications	21
[III] Kernel Functions And The Convergence Theorem	24
[3.1] Preliminaries on $GL(r)$	24
[3.2] Combinatorics and reduction theory	28
[3.3] The convergence theorem	34
[IV] The Adèlic Theory	41
[4.1] Basic facts	41
[V] The Geometric Theory	45
[5.1] The $J_O^T(f)$ and $J^T(f)$ distributions	45
[5.2] A geometric Γ -function	47
[5.3] The weight functions	51
[VI] The Geometric Expansion Of The Trace Formula	60
[6.1] Weighted orbital integrals	60
[6.2] The unipotent distribution	65
[VII] The Spectral Theory	69
[7.1] A review of the Eisenstein series	69
[7.2] Cusp forms, truncation, the trace formula	72
[VIII] The Invariant Trace Formula And Its Applications	79
[8.1] The invariant trace formula for $GL(r)$	79
[8.2] Applications and remarks	85
Bibliography	87
Subject index	94