

Contents

Some Frequently Used Notations	iii
Abstract	v
Acknowledgements	vi
Introduction	vii
Chapter 1 Group action and algebra	1
1.1 Group action on a set	1
1.2 Algebra and group algebra	5
1.3 Relative trace map	11
Chapter 2 Incidence algebras	17
2.1 Incidence algebra and incidence functions	17
2.2 Modular incidence algebras	31
2.3 Group action on modular incidence algebras	37
Chapter 3 Tensor product of incidence algebras	41
3.1 Tensor product of vector spaces	41
3.2 Tensor product of algebras	44
3.3 Tensor product of incidence algebras	48
Chapter 4 Blocks of incidence algebras	51
4.1 Block algebra and defect group of incidence algebras	51
4.2 Pointed group and nilpotent blocks	55
4.3 Category algebra and the relation between group algebra and incidence algebra	60
References	62