

I. Cherednik Ya. Markov R. Howe G. Lusztig

# Iwahori-Hecke Algebras and their Representation Theory

Lectures given at the C.I.M.E. Summer School  
held in Martina Franca, Italy  
June 28 - July 6, 1999

Editors: M. Welleda Baldoni  
Dan Barbasch



Springer

# Table of Contents

## Hankel transform via double Hecke algebra

<i>Ivan Cherednik and Yavor Markov</i> .....	1
1 L-operator .....	2
2 Hankel transform .....	3
3 Dunkl operator .....	5
4 Nonsymmetric eigenfunctions .....	7
5 Master formula .....	9
6 Double H double prime .....	11
7 Algebraization .....	14
8 Inverse transform and Plancherel formula .....	16
9 Finite-dimensional case .....	18
10 Truncated Bessel functions .....	21
References .....	24

## Affine-like Hecke algebras and $p$ -adic representation theory

<i>Roger Howe (Lecture Notes by Cathy Krilloff)</i> .....	27
1 Introduction .....	27
2 Structure of $p$ -adic $GL(V)$ and $Sp(V)$ .....	29
3 Structure of the Iwahori Hecke Algebra .....	46
4 Results on representations of $G$ .....	51
5 Spherical Function Algebras .....	54
6 Consequences .....	65
References .....	67

## Notes on affine Hecke algebras

<i>George Lusztig</i> .....	71
1 The affine Hecke algebra .....	71
2 $\mathcal{H}$ and equivariant $K$ -theory .....	73
3 Convolution .....	77
4 Subregular case .....	79
5 Subregular case: type $A$ .....	83
6 Subregular case: types $C, D, E, F, G$ .....	97
References .....	103