TABLE OF CONTENTS

The SOC and LOC xv
Preface xvii
List of Participants xix

1. PULSATION AND ROTATION

Observations of Pulsating OB Stars
M. Jerzykiewicz **3**
Nonadiabatic observables in β Cephei star models
H. Cugier, W.A. Dziembowski, A.A. Pamyatnykh 15
Multiwavelength studies of β Cephei stars
H. Cugier, A. Pigulski, G. Polubek, R. Monier 17
Nonlinear pulsational behaviour of BW Vulpeculae
P. Moskalik, J.R. Buchler 19
Stability of the pulsation of 12 (DD) Lacertae
A. Pigulski 21
Period variations in the β Cep star α Lup
E. Chapellier, J.C. Valtier 23
Period variations in the β Cep star β Cru
J.C. Valtier, E. Chapellier, J.M. Le Contel 25
High-resolution spectroscopy of β Cephei stars
C. Waelkens, H. van Winckel, K. de Mey 27
A search for β Cephei stars in LMC and SMC
H. Kjeldsen, D. Baade 29
Photometric variability in early B stars I. 53 Arietis
S. González Bedolla 31
Multiperiodicity in light variations of 53 Persei: results from optical photometry in 1990 October - 1991 January
L. Huang, Z. Guo, J. Hao J.R. Percy, M.S. Fieldus et al. 33
NRP mode typing for 53 Persei: results from Voyager photometry
*M.A. Smith, **L. Huang*** 37
Photometric and spectroscopic observations of the 53 Per star: ζ Cas
H. Sadsaoud, D. Le Contel, E. Chapellier, S. González Bedolla et al. 39
HD 37151: a new "slowly pulsating B star"
P. North, S. Paltani 41

The peculiar binary system HR 8891 (ET And)
R. Kuschnig, W.W. Weiss, N. Piskounov, T. Ryabchikova et al. 43
Spectroscopical analysis of δ Scuti stars
E. Solano, J. Fernley 47
STACC
S. Frandsen 49
TAMS companions of classical cepheids
N.R. Evans 51
Pulsation of Wolf-Rayet stars: WR40
H. Schneider, M. Kiriakidis, W.W. Weiss, W. Glatzel, K.J. Fricke .53
The New Opacities and B-Star Pulsations
W.A. Dziembowski **55**
Convective zones in the envelope of massive stars
F.M. Alberts 67
g-Mode instability in the main sequence B-type stars
W.A. Dziembowski, P. Moskalik, A.A. Pamyatnykh 69
OP *versus* OPAL opacities: consequences for B star oscillations
A.A. Pamyatnykh, W.A. Dziembowski, P. Moskalik, M.J. Seaton 70
The stability of massive stars
W. Glatzel, M. Kiriakidis, K.J. Fricke 73
Mode Identification in Pulsating Stars
C. Aerts **75**
Amplitude variations in rotationally split multiplets
J.R. Buchler, M.-J. Goupil, T. Serre 87
Line Profile Variations in Be Stars
D.R. Gies **89**
Pulsations of Be stars: time series analysis of He I λ4921
M.E. Hahula, D.R. Gies 100
Activity of the Be star 28 Cygni: 1985 – 1991
Ž. Ružić, V. Vujnović, K. Pavlovski, H. Božić, J.R. Percy et al. ... 102
Seismology of southern Be stars
E. Janot-Pacheco, N.V. Leister 104
Rapid spectroscopic and photometric variability in the Be star α Eridani
N.V. Leister, E. Janot-Pacheco, M.T.C. Buck, M.P. Dias et al. ...106
A survey of line profile variations in non-emission line B0-B5 III-V stars
M.S. Fieldus, C.T. Bolton 108
MUSICOS 92 observations of θ^2 Tauri
E.J. Kennelly, G.A.H. Walker, The MUSICOS Team 110
Time-series analysis of the O4 supergiant ζ Puppis
A. Reid 112
Photospheric and circumstellar variability of the rapidly rotating O star HD 93521
A.W. Fullerton, D.R. Gies, C.T. Bolton 114

Pulsation in Rapidly Rotating Stars
M.J. Clement **117**
Overstability of nonradial pulsations in rotating early type stars
H. Saio, U. Lee 128
The Evolution of Rotating 15 $M_\odot$ Stars
S. Sofia, J.M. Howard, P. Demarque **131**
Rotationally induced turbulent diffusion in early B-type stars: theory and observations
P. Denissenkov 145
Effects of rotation on the main sequence evolution of a $5M_\odot$ star
J. Fliegner, N. Langer 147
The abundance anomalies in a rotationally evolved $20M_\odot$ OBN star model
D. Eryurt, H. Kirbiyik, N. Kizilouğlu, R. Civelek, A. Weiss 149
Main-sequence broadening, Be stars, and stellar rotation in h and χ Persei
J. Denoyelle, C. Aerts, C. Waelkens 151

2. MAGNETIC FIELDS

Observations of Magnetic Fields in B Stars
D. Bohlender **155**
Mass loss, magnetic field and chemical inhomogeneities in the He-weak star HD 21699
S. Hubrig, G. Mathys 167
The He-strong star HD 96446: oblique rotator or pulsating magnetic variable?
G. Mathys 169
The circumstellar environment of σ Orionis E
C.I. Short, C.T. Bolton 171
The Magnetic Fields of the A and B Stars
D. Moss **173**
Fossil magnetic fields and rotation of early-type stars
A.E. Dudorov 184

3. X-RAY OBSERVATIONS

ROSAT Observations of B and Be Stars
J.P. Cassinelli, D.H. Cohen **189**
X-ray properties of early-type stars
T.W. Berghöfer, J.H.M.M. Schmitt 200

Effects of X-rays on the ionization state of Be star winds
J.J. MacFarlane 202
Infrared spectroscopy of Be/X-ray binaries
C. Everall, M.J. Coe, P. Roche, A.J. Norton, S.J. Unger 204
Multiwavelength observations of the Be-star/X-ray binary EXO2030+375 during outburst
A.J. Norton, M.J. Coe, C. Everall, P. Roche, L. Bildsten et al. 206
EXOSAT observations of the Be/X-ray binaries 2S0114+65 and 4U2206+54
P. Saraswat, K.M.V. Apparao 208
Photometric and Hα observations of LS +61°303
J.M. Paredes, J. Martí, F. Figueras, C. Jordi, G. Rosselló et al. ... 211
Be star disk structure as implied by X-ray observations
P. Saraswat, K.M.V. Apparao 213

4. POLARIZATION

Recent Results from Ultraviolet and Optical Spectropolarimetry of Hot Stars
K.S. Bjorkman **219**
Spectropolarimetric determination of circumstellar disc inclinations
K. Wood 230
The polarization of Hβ in γ Cas
Y.M. Jiang, G.A.H. Walker, N. Dinshaw, J.M. Matthews 232
Long-term spectroscopic and polarimetric variations of the Be star κ Dra
J. Arsenijević, S. Jankov, S. Kršljanin, A.M. Hubert et al. 234
Common properties of some Be stars optical polarization parameters
J. Arsenijević, S. Marković-Kršljanin, A. Kubičela, S. Jankov 236

5. Be STARS: SPECTROSCOPY AND PHOTOMETRY

Photospheric Activity in Selected Be Stars: λ Eri and γ Cas
M.A. Smith **241**
Rapid variability of Hα emission line in Be stars
B.G. Anandarao, A. Chakraborty, R. Swaminathan, B. Lokanadham 254
Emission-like feature due to a latitudinal differential rotation
J. Zorec 257
Study of the HeI λ4471 line-profile of Be stars
D. Ballereau, J. Chauville, A. Garcia, J. Zorec 259
The HeI λ4471 line behaviour of 31 Peg
D. Ballereau, J. Chauville, J. Zorec 261

The FeII λ5317 line profile of nine Be stars
D. Ballereau, J. Chauville, J. Zorec 263
FeII line widths as tracers for the geometry of Be star envelopes
R.W. Hanuschik 265
FeII, FeIII and MgII spectra of Be stars
L.H. Barrera, J. Dachs, T.W. Berghöfer 267
Spectroscopy of Be stars in NGC 330
P.A. Mazzali, F. Pasian, D.J. Lennon, P. Bonifacio, V. Castellani 269
Be stars in young LMC clusters
H. Kjeldsen, D. Baade 271
Puzzling problems of He I line formation in early B stars
M.A. Smith, I. Hubeny, T. Lanz 273
Be stars in the ultraviolet spectral classification system
J. Rountree, G. Sonneborn 275
UV spectral classification and stellar winds in a sample of Be and standard stars
A. Slettebak 277
Analysis of IUE spectrograms for Be stars
T. Eversberg, J. Dachs, T.W. Berghöfer, C. Huilai, U. Lemmer 280
First results of an international multisite multitechnique campaign on *o* And
J.P. Sareyan, J. Chauville, D. Briot, S.J. Adelman et al. 282
Results from six multiwavelength campaigns to study short-term FUV flux variability and phase-dependent mass loss in Be stars
G.J. Peters 284
Periodic Variations and Mass Loss in Be Stars
H. Saio **287**
Photometric studies of Be star variability
J.R. Percy 299
Photometric characteristics of the Be stars: almost twenty years of UBV monitoring at the Hvar observatory
K. Pavlovski, H. Božić, Ž. Ružić, P. Harmanec, J. Horn et al. 301
Photometry of early type stars in open clusters (NGC 1444, NGC 1662, NGC 2129, NGC 2169 and NGC 7209)
J.H. Peña, R. Peniche 303
Rapid multicolour variations of selected southern Be stars
S. Štefl, P. Harmanec, D. Baade 305
Simultaneous photometry and spectroscopy of the rapid variability of the Be star η Cen
S. Štefl, D. Baade, P. Harmanec, L.A. Balona 307
Simultaneous *uvbyβ* photometry and Hα spectroscopy of Be stars in open clusters
J. Fabregat, J.M. Torrejón, P. Reig, G. Bernabeu 309

Periodic Variability of Be Stars: Nonradial Pulsation or Rotational Modulation?
D. Baade, L.A. Balona **311**
Line-profile variable ϵ Per: spectroscopic binary and (?) mild Be star
A.E. Tarasov, V.V. Kostunin, P. Harmanec, J. Horn et al. 325
An improved model of the B0.5e + Be binary system φ Per
P. Harmanec, J. Horn, P. Koubský, K. Juza, H. Božić et al. 327
HdBe stars: hydrogen-deficient supergiants with emission lines
C.S. Jeffery 329
Spectroscopic analyses of HdBe stars
C.S. Jeffery 331
Detection of calcium abundance stratification in Ap stars
J. Babel 333
Stark widths of astrophysically important four- and five-times charged ion lines
M.S. Dimitrijević 335
Stark broadening of stellar Pt II lines
M.S. Dimitrijević 337

6. Be STARS: CIRCUMSTELLAR ENVIRONMENT

Variability in the Circumstellar Envelope of Be Stars
A.M. Hubert **341**
Physics of the phase changes of Be stars
K.K. Ghosh 351
Difference between Be stars and shell stars from Hα emission
H. Chen, A.R. Taylor 354
The number of Be stars compared with the number of B stars, taking into account the specific physical characteristics of Be stars
D. Briot, J. Zorec 356
Shell profiles in Be star spectra
R.W. Hanuschik 358
Phase changes in Be stars: The Be-shell and Be phases of Pleione
V. Doazan, A. De La Fuente, N. Cramer, M. Barylak 360
The photosphere of Pleione
J. Zorec 362
Short-term spectroscopic variations of the southern Be star 48 Lib
M. Floquet, A.M. Hubert, H. Hubert, E. Janot-Pacheco, N.V. Leister 364
Structure of the envelope of 48 Lib
A. Cruzado, L. Cidale, J. Zorec 366
Growth of the line-profile variation region during Be episodes
E. Kambe 368

70 Years of observations of 4 Her: changes through three shell episodes
P. Koubský, P. Harmanec, J. Horn, A.M. Hubert, H. Hubert et al. .370
Activity in the circumstellar envelope of the Be/shell star ζ Tau
Y. Guo, L. Huang, J. Hao 372
Period dependent variations of the shell spectrum of V923 AQL
L. Iliev 374
Long-term periodic variability in UV absorption lines of the Be star γ Cas: on the relation with V/R variations in the Hβ line
J.H. Telting, L. Kaper 376
On the formation of Balmer emission lines in the model envelopes of Be stars
T. Kogure, S. Suzuki, M. Mon 378
Some observational appearances of $m = 1$ density waves in Be star disks
A.T. Okazaki 380
Global disk oscillations: theoretical line profiles
W. Hummel, R.W. Hanuschik 382
Global oscillations in Be star envelopes: observational evidence
R.W. Hanuschik, W. Hummel, O. Dietle, J. Dachs, E. Sutorius 384
Rapid line profile variability of Hα in two A0e Herbig stars of the P-Cyg-subgroup and a model for their circumstellar envelope
M.A. Pogodin 386
Profile variability of Hα in the B3e Herbig star HD 200775 as indication of matter infall and inhomogeneous stellar wind
N.G. Beskrovnaya, M.A. Pogodin, A.G. Scherbakov, A.E. Tarasov .389
Dust and gas in shells around Herbig Ae/Be stars
N.V. Voshchinnikov, V.B. Il'in, A.F. Kholtygin 392
Circumstellar environment of the B[e] star MWC 349 (V1478 Cyg)
R.V. Yudin 394
MWC 314 - A new galactic B[e] supergiant
A.S. Miroshnichenko.....396
The Structure of the Circumstellar Material in Be Stars
L.B.F.M. Waters, J.M. Marlborough **399**
Infrared spectroscopy of Be stars
R.M. Torres, A. Damineli-Neto, J.A. De Freitas Pacheco 412
Infrared emission lines of Mg II in B stars
T.A. Aaron Sigut, J.B. Lester 414
Identifying near-IR variable Be stars
S.M. Dougherty, A.R. Taylor 416
Structure of the circumstellar envelope of ψ Persei at large radii
S.M. Dougherty, A.R. Taylor 418
A hidden class of Be stars?
P.A. Zaal, L.B.F.M. Waters, J.M. Marlborough, T.R. Geballe 420

Energy distribution of Be stars
G.C. Kilambi 422
Continuous spectra of circumstellar envelopes of Be stars
D. Rohe-Koths, J. Dachs 425
High-precision continuum rectification. Towards an abundance analysis of Be and Bn stars
M. Kolb, D. Baade 427
IR-radio spectral indices for Be stars
H. Chen, A.R. Taylor, S.M. Dougherty L.B.F.M. Waters 429
Problems of modelization of circumstellar matter out of equilibrium
J-P.J. Lafon, E. Huguet 431
Optical Resolution of Be Star Envelopes
F. Vakili, D. Mourard, P. Stee **435**
Candidates of Be stars for GI2T interferometry
R. Hirata 448
Seven Be stars resolved by optical long-baseline interferometry
A. Quirrenbach 450

7. OB STELLAR WINDS

The Wind-Compressed Disk Model
J.E. Bjorkman **455**
Two-dimensional hydrodynamical simulations of wind-compressed disks around rapidly rotating B-stars
S.P. Owocki, S.R. Cranmer, J.M. Blondin 469
Latitude dependent radiative wind model for Be stars: line profiles and intensity maps
Ph. Stee, F.X. De Araújo 470
Continuum flux and polarization in B[e] supergiants
F.X. De Araújo, Ph. Stee, J. Lefèvre 473
The Basic Physics of Hot-Star Winds
S.P. Owocki **475**
Radiatively driven winds of OB stars
M.R. Shimada, M. Ito, R. Hirata, T. Horaguchi 487
Radiation-accelerated ions in hot star winds: heating and "turbulence" effects
E.Ya. Vilkoviskij 490
A simple model for a relatively driven metallic wind in A0 stars
J. Babel 492
Smooth winds and clumped winds for early-type stars
R. Blomme, M. Runacres 494

Line profiles in expanding atmospheres
L. Cidale 496
Non-thermal velocities in the stellar wind of early-type stars
R. de Vos, R. Blomme 498
Understanding the P Cygni profile
N. Rons 500
Improved modelling for spatially resolved spectroscopy of a P Cyg envelope
M. Bourguine, A. Chalabaev 502
The hard life of clumps in atmospheres of early-type stars
A.F. Kholtygin 505
Time-Dependent Phenomena in OB Star Winds
R.K. Prinja **507**
Wind Variability in O-Type Stars
H.F. Henrichs, L. Kaper, J.S. Nichols **517**
International multiwavelength campaigns on short-term variability of OB stars: optical polarimetry
D. McDavid 530
High resolution spectroscopy at the ESO 50 cm telescope: spectroscopic monitoring of luminous hot stars
A. Kaufer, H. Mandel, O. Stahl, B. Wolf, Th. Szeifert et al. 532
The stellar wind of χ^2 Ori and its variability
L. Sapar, A. Sapar 534
Observed variety of timescales in variability of P Cygni
I. Kolka 536
Stellar winds in A-type supergiants
E. Verdugo, A. Talavera 538

Author Index 541
Objects Index 544
Subject Index 548