

Contents

Part I Rotating Objects

Invited Lectures

Equilibrium Configurations of General Relativistic Rotating Stars	3
<i>Y. Eriguchi</i>	
Axisymmetric Stationary Solutions of Einstein's Equations	29
<i>C. Hoenselaers</i>	
The Dyadic Approach to Solutions for Rotating Rigid Bodies	55
<i>H.D. Wahlquist</i>	
Stationary and Axisymmetric Perfect-Fluid Solutions to Einstein's Equations	73
<i>J.M.M. Senovilla</i>	
Black-Holes in X-Ray Binaries	89
<i>J. Casares</i>	

Contributed Talks

General Relativistic Stationary Axisymmetric Rotating Systems ...	113
<i>S. Bonazzola, E. Gourgoulhon, and M. Salgado</i>	
The Superposition of Two Kerr-Newman Solutions	119
<i>A. Chamorro, V.S. Manko, and N.R. Sibgatullin</i>	
Stationary Black Holes Rotate Differentially	123
<i>L. Herrera and V.S. Manko</i>	
Differentially Rotating Perfect Fluids	125
<i>F.J. Chinea</i>	
Rotating Barotropes	130
<i>L.M. González-Romero</i>	
Matching of Stationary Axisymmetric Spacetimes	136
<i>M. Martín-Prats and J.M.M. Senovilla</i>	
Axial Symmetry and Conformal Killings	141
<i>M. Mars and J.M.M. Senovilla</i>	

Part II Other Topics

Invited Lectures

Numerical Relativistic Hydrodynamics	149
<i>J.M. Ibáñez</i>	

Singularity-Free Spacetimes	185
<i>J.M.M. Senovilla</i>	
On Radiative Solutions in General Relativity	195
<i>D. Kramer</i>	
Application of Wahlquist-Estabrook Method to Relativity Vacuum Equations with One Killing Vector	203
<i>B.K. Harrison</i>	
Contributed Talks	
On the Regularity of Spherically Symmetric Static Spacetimes	213
<i>T.W. Baumgarte</i>	
Shock Capturing Methods in 1D Numerical Relativity	218
<i>C. Bona, J.M. Ibáñez, J.M. Martí, and J. Massó</i>	
Invariance Transformations of the Class $y'' = F(x)y^N$ of Differential Equations Arising in General Relativity	227
<i>E. Herlt and H. Stephani</i>	
Relativistic Kinetic Theory and Cosmology	235
<i>D.R. Matravers</i>	
Colliding Gravitational Waves with Variable Polarization	245
<i>N. Breton</i>	
The Monopole – Quadrupole Solution of Einstein's Equations	250
<i>J. Martín and J.L.H. Pastora</i>	
Effective Action Methods in Cosmology: The Back-Reaction Problem	255
<i>A. Campos and E. Verdaguer</i>	
Quantization in a Colliding Plane Wave Spacetime	266
<i>M. Dorca and E. Verdaguer</i>	
Coleman's Mechanism in Jordan–Brans–Dicke Gravity	272
<i>L.J. Garay and J. García-Bellido</i>	
No–Boundary Condition in Multidimensional Gravity	277
<i>G.A. Mena Marugán</i>	
Distance of Matter Inside an Einstein–Strauss Vacuole	283
<i>M. Portilla and J.J. Miralles</i>	
Conformally Stationary Cosmological Models	287
<i>J.J. Ferrando, J.A. Morales, and N. Portilla</i>	
L-Rigidity in Newtonian Approximation	291
<i>M. Barreda and J. Olivert</i>	
Presymplectic Manifolds and Conservation Laws	296
<i>V. Liern and J. Olivert</i>	
On a Project for a Repetition of the Michelson – Morley Experiment	301
<i>Ll. Bel and J. Martín</i>	
Nonlinear Evolution of Cosmological Inhomogeneities	303
<i>D. Sáez</i>	
The Great Attractor and the COBE Quadrupole	304
<i>M.J. Fullana, D.P. Sáez, and J.V. Arnau</i>	