

CURRICULUM VITAE

John Joseph Dubinski

updated: June 25, 2008

SHORT BIOGRAPHY

John Dubinski has been a student of astronomy for more than 25 years beginning as an enthusiastic amateur observer as a teenager to his current position in theoretical astrophysics at the University of Toronto. He is an expert in the application of N-body methods to the study of galaxy formation and dynamics and is a pioneer in the development of N-body algorithms on parallel supercomputers that in recent times permitted simulations of galaxies and the large-scale structure using models containing hundreds of millions to billions of particles. During the past decade, he has developed additional skills in computer graphics that have permitted the creation of animations of galaxies at extreme levels of numerical resolution.

PERSONAL

Date of Birth: 1963
Citizenship: Canadian
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REFERENCES

Available by request.

EDUCATION

Jan 88 – Aug 91 Ph.D., Astronomy, University of Toronto
 Sep 86 – Jan 88 M.Sc., Astronomy, University of Toronto
 Sep 81 – May 86 B.Sc., Physics, University of Waterloo

CAREER

Aug 2006 - present Adjunct Professor
 Department of Astronomy and Astrophysics, University of Toronto
 July 1999 - July 2006 Assistant Professor (Contractually Limited Term Appointment/non tenure-track)
 Department of Astronomy and Astrophysics and
 Canadian Institute for Theoretical Astrophysics, University of Toronto
 Oct 97 – July 1999 Senior Research Associate
 Canadian Institute for Theoretical Astrophysics
 Sept 96 – Oct 97 Research Associate
 Canadian Institute for Theoretical Astrophysics
 Sept 94 – Sept 96 Postdoctoral Fellowship
 University of California, Santa Cruz
 Sept 91 – Sept 94 Harvard–Smithsonian Center for Astrophysics Postdoctoral Fellowship
 Center for Astrophysics, Harvard University.

AWARDS AND SCHOLARSHIPS

Oct 97 – Oct 99 Jeffrey Bishop Fellowship in Galaxy Dynamics, CITA
 Sept 90 – Sept 91 U of T Open Fellowship, University of Toronto
 Sept 86 – Sept 90 Natural Sciences and Engineering Research Council
 1967 Postgraduate Scholarship, University of Toronto

RESEARCH INTERESTS AND SKILLS

Research: Cosmology and large-scale structure, Galactic dynamics, Galaxy formation, Planet Formation, Scientific Visualization and Animation of Galactic Dynamics

Technical Skills: Extensive experience in code development in C and Fortran. 15 years experience in parallel programming with message-passing algorithm development. Computer graphics and animation software development. Construction and configuration of Beowulf Linux-based computer clusters.

RESEARCH GRANTS

Jul 1999	University of Toronto Startup grant	\$13K
Apr 2000-2004	NSERC Discovery Grant	\$98K
Apr 2000	Connaught Grant, University of Toronto	\$13K
Apr 2000	Canadian Foundation for Innovation Equipment grant Co-I. with P.I. Ue-Li Pen (CITA)	\$400K
Apr 2004-2009	NSERC Discovery grant	\$89K

SUPERCOMPUTING GRANTS AND PRIZES

Note that after 2000 significant supercomputing facilities became available in Canada through grants to CITA through the Canadian Foundation for Innovation and so I no longer was dependent on US facilities for computer time.

- Sept 98 National Center for Supercomputing Applications
 Proposal: The Dynamical Evolution of Galaxies in Clusters
 Investigators: Margaret Geller, John Dubinski, Daniel Koranyi
 Grant: 60000 node-hours on the SGI Origin
- Sept 96 Pittsburgh Supercomputing Center
 Proposal: The Evolution of Galaxies in Clusters
 Grant: 40,000 node-hours on the PSC Cray T3D
- Dec 95 Supercomputing 95, San Diego, California
 Prize awarded jointly with M. Norman et al. for
 "Most Heterogeneous Parallel Computation" for our entry:
Galaxies Collide on the I-WAY: An Example of Heterogeneous Wide-Area Collaborative Supercomputing
- June 93 Pittsburgh Supercomputing Center
 Proposal: The Formation of Galaxy Groups and Satellite Systems
 Grant: 19200 node-hours on the PSC Connection Machine 5

TEACHING EXPERIENCE

Galactic Structure and Dynamics, graduate level
 Computational Astrophysics, graduate level
 Research in Astronomy, senior undergraduate
 Galaxies and Cosmology, undergraduate physics 2nd year
 Origin and Evolution of the Universe, undergraduate arts
 The Solar System, undergraduate arts

PROFESSIONAL DUTIES

Journal Referee: Astrophysical Journal, Nature, Astronomy and Astrophysics, Journal of Computational Physics, Computer Physics Communications, Monthly Notices of the Royal Astronomical Society

Grant Referee: NSERC (Canada), PPARC (UK), National Science Foundation grant review panelist 2003, 2008 (USA), NASA Theory Grants panelist (USA) 2005, 2006

Observing Proposal Referee: Canada France Hawaii Telescope, Hubble Space Telescope time allocation panelist 1998

PhD examiner: Toronto, Harvard, University of Edinburgh

Technical consultation and support: CITA supercomputing infrastructure 2002-04, 2007-08

GRADUATE STUDENTS

Sep 04-Jul 06	Silvia Bonoli M.Sc. project	Blackhole binaries in merging galaxies
Sep 04-Aug 06	Jean-Rene Gauthier M.Sc. project	Dark halo substructure
Jun 03-Aug 03	Stelios Kazantzidis, visiting Ph.D. (Zurich)	Simulations of Galaxy Formation
Aug 00-Apr 01	Juhan Kim, visiting Ph.D. (Seoul)	Particle-Mesh Tree N-body code
Sep 00-Sep 01	Jennifer O'Neill M.Sc., Astronomy	Simulations of Barred Galaxies

UNDERGRADUATE STUDENTS

2007-8	Sarah Nickerson (Toronto, Astronomy)	Spiral Instabilities and Satellite Interactions
2004	Tiffany Fung (Toronto, Astronomy)	Interacting Galaxies
2002	Takashi Okamoto (Toronto, Astronomy)	Computer Animation
2001	Aurelie Neveol (Lyon, Computer Science)	Computer Animation of Galaxies
2001	Michael Pritchard (Toronto, Astronomy)	Planet formation
1998	Michael Forbes (UBC, Physics)	Smoothed Particle Hydrodynamics
1998	Momar Dieng (Macalaster College, Physics)	Galaxy Interactions in Clusters

INVITED COLLOQUIA & TALKS

1. The Impact of Simulations in Cosmology and Galaxy Formation, SISSA, Trieste, 20-22 October 2008, Visualizing Astrophysical N-body Simulations
2. Frontiers in Computational Astrophysics: The Origin of Stars, Planets and Galaxies, Ascona, Switzerland, invited speaker Jul 08
3. Georgian Triangle Lifelong Learning Institute, Living in a Dynamic Universe (popular), Apr 08
4. Queen's University, Spiral and Bar Instabilities Provoked by Dark Matter Satellites, Nov 07
5. Starfest 2007, Living in a Dynamic Universe (popular), Aug 07
6. American Physical Society, Jacksonville, Advances in Galactic Dynamics: Classical Mechanics in the 21st Century, invited speaker Apr 07
7. XXI National Congress of Astronomy Mexico, Advances in Galactic Dynamics: Classical Mechanics in the 21st Century, invited speaker Mar 07
8. Denver Museum of Natural Science, Future Sky: A Whimsical Look at the Ultimate Fate of the Milky Way (popular), invited speaker Dec 06
9. Space Telescope Science Institute, The Future of the Galaxy, talk Sep 06
10. MIT, The Effect of Triaxiality and Substructure on Disk Evolution, talk Aug 06
11. Royal Observatory of Edinburgh, The Effect of Triaxiality and Substructure on Disk Evolution, talk Jul 06
12. Artistic expression with Gravity, Knowledge Media Design Institute, University of Toronto, Mar 06
13. Klemperer's Dream, American Astronomical Society Visualization session, Jan 06
14. Science Arts Panel discussion Sifting Time, Shifting Space, Goethe Institute, Toronto, Nov 05
15. Toronto, School of Continuing Studies, The Art of Gravity, Oct 05
16. UCLA, IPAM N-body Workshop, Disk galaxy halo interactions, Apr 05
17. UBC Colloquium, A Universe in Motion, Oct 04
18. CASCA, Visualizing Galaxy Interactions and Dynamics, Winnipeg, Jun 04
19. Banff Media Centre, Simulation Re-Enactment, Banff, May 04
20. University of California, Evolution of Galaxy Clusters, Davis, Apr 04
21. University of California, Evolution of Galaxy Clusters, Berkeley, Apr 04
22. Subtle Technologies, Visualization in Galactic Dynamics, Toronto, May 03
23. Hayden Planetarium Spaceshow planning workshop, Galaxy Collisions, New York Sep 02

24. Parallel Computation in Astrophysics, Workshop on Cluster Computing, NRC, Ottawa, Jan. 02
25. Meshfree Methods for Partial Differential Equations, Bonn, Sept 01, DECLINED
26. Computational Fluid Dynamics in Astrophysics, UK Astrophysical Fluids Facility, U. of Leicester, Sept 01, Review talk on N-body/fluid methods
27. IAU symposium 208 “Astrophysical Supercomputing using Particle Simulations”, Tokyo, July 01, Galaxies in Clusters
28. Royal Astronomical Society of Canada, Niagara Falls, May 01, Galaxy in Collision
29. Royal Astronomical Society of Canada, Toronto, Feb 01, Galaxy in Collision
30. Queens University, Jan 01, Galaxy Evolution
31. Rutgers University, Sept 00, Galaxy Evolution
32. Technology Entertainment and Design (TED), TEDCity, Toronto, June 00, Colliding Galaxies
33. U. of Western Ontario, February 00, Galaxies in Clusters

35 invited talks from 1991-1999

IMAGES and ANIMATIONS

Images and animations produced from my simulations of galaxies have been presented in various media including magazines, textbooks, television, the internet and live performance as both images and animations.

1. Jul 08 Discovery Channel, interview for 3-part series on Cosmic Collisions
2. Apr 08 Astronomy magazine, colliding galaxy images
3. Jan 08 The Teaching Company, colliding galaxy animations, cosmology series
4. Dec 07 Bildredaktion, colliding galaxy images, German science magazine
5. Dec 07 MW-Andromeda animation in Time Limits, Science documentary, Austrian Public Broadcasting, ORF
6. Sep 07 Cover image of colliding galaxies, Natural History Magazine
7. Mar 07 XXI National Congress of Astronomy Mexico, Live performance of GRAVITAS with John Farah, invited
8. Mar 07 Harmony Channel, various animations for television
9. Dec 06 Denver Science Museum, Digital dome show production of “Future Sky”
10. Oct 06 Sky and Telescope magazine, The Great Milky-Way Andromeda Collision by John Dubinski
11. Aug 06 MIT, Live performance of GRAVITAS with John Farah
12. Aug 06 SIGGRAPH06, “Future Sky” featured in the Computer Animation Festival, Boston, MA
13. Mar 06 Music Gallery, official GRAVITAS DVD launch, animations presented in live concert with John Farah, Toronto
14. Jan 06 GRAVITAS: Portraits of a Universe in Motion, DVD released
15. Oct 05 Music Gallery, Toronto, animations presented in live concert with John Farah
16. Sep 05 Cosmic Perspectives, Toronto, animations presented in 2 pre-shows
17. Jul 05 Adler Planetarium, Chicago, Inspiration of Astronomical Phenomena (INSAP), 3-D Galaxy Collision Display
18. May 05 ESA releases high resolution animations to more than 10 planetaria in Europe

19. Apr 05 Hubble 15th Anniversary DVD, European Space Agency, 20 minute Bonus section, 700000+ copies distributed
20. Oct 04 St. Louis Planetarium
21. Jun 04 Barcelona Science Museum
22. Apr 04 Geo Wissen, Germany, images
23. Oct 03 Documentary on the Vatican Observatory, Vision and Discovery TV, animations
24. Oct 03 Kos: revista di medicina, cultura e scienze umane, Italy, images
25. Oct 03 Scientific American, simulation images
26. Sep 03 Science et Vie, France, simulation images
27. Jul 03 U of Toronto press release, Canada's fastest computer simulates galaxies, black holes
28. Feb 03 NATIONAL GEOGRAPHIC MAGAZINE, Article on Galaxy evolution, 3 pages of illustrations
29. Dec 02 Sky News, Canada of illustrations
30. Oct 02 Zenit Magazine, Netherlands
31. Oct 02 Exnihilo Productions, Documentary, "L'Astronome et l'Indien", France and Germany
32. Jul 02 Osgur ve Bilge, Turkey, Jul 02
33. May 02 Quirks and Quarks, CBC Radio Interview on Galaxy Collisions
34. Jan 02 Uitgeverij Averbode, Belgian science magazine
35. Nov 01 I-Television, France, Nov 01
36. Oct 01 Japanese Public Television (NHK), Space Millenium Series, Crossing an Ocean of Galaxies, Interview and Animations
37. May 01 NASA educational TV live
38. Apr 01 Italian Science Council film on the VLT construction
39. Mar 01 Readers Digest Book on Galaxies
40. Jan 01 Harper Collins Encyclopedia of Astronomy
41. Nov 00 BBC Horizon, Supermassive Blackholes, UK, Interview and Animations
42. Sep 00 Access Magazine, National Center for Supercomputing Applications, Mind over Dark Matter.
43. Jul 00 Future of the Galaxy featured on N3TV, Next, New, Now, CITYTV
<http://www.citytv.com/n3tv/1-25.asp>
44. Jun 00 UCSD-TV and Chandra X-ray Science Center
45. May 00 Editora Abril (Brazilian Press) - SUPER magazine - 2 page spread
46. May 00 New York Times - Down on the Galactic Highway A Head-On Collision Shapes Up
By Kenneth Chang
47. May 00 National Post, Globe and Mail, Toronto Star - reprint of NY Times article
48. May 00 San Diego Supercomputing Center online magazine Astrophysicists Run Largest Galactic Collision Simulations Ever on NPACI's Blue Horizon Volume IV Issue 9
www.npaci.edu/online/v4.9/galaxies2.html
49. Apr 00 ABC News - Collision Course/ Supercomputer shows result of Galactic Collision
abcnews.go.com/sections/science/DyeHard/dyehard000426.html
50. Apr 00 Ciencia Hoje (Science Today) magazine- Brazil - <http://www.ciencia.org.br/>

51. Apr 00 University of Toronto Press Release www.newsandevents.utoronto.ca/bin/000414b.asp, Astrophysicist maps out our own galaxy's end by Jan Wong
52. Apr 00 Montreal Planetarium show - "Realm of the Galaxies"
53. Mar 00 Envision magazine Vol. 16 No. 1 January-March 2000 NPACI and SDSC Quarterly Science Magazine Its the End of the Galaxy as we know it - cover story www.npaci.edu/envision/
54. Mar 00 Brooks/Cole Publishing web-based astronomy text, Tennessee, USA
55. Jan 00 Finnish popular science magazine, Finland
56. Jan 00 Stern Magazine, Germany
57. Jan 00 Science Magazine, images published 01-07-2000 issue
58. Feb 00 Ministry of Culture Media Arts Festival, Tokyo, Japan
59. Sep 99 London Effects & Animation Festival, London, England
60. Nov 99 Fox Television, KTVU San Francisco
61. Aug 99 SIGGRAPH99 - cluster simulation presented at the electronic theatre exhibition
62. Jan 99 Galaxy images on display at the Illini Center, University of Illinois
63. Jun 98 THE COMPLETE COSMOS, British educational series on astronomy, York Films of England.
64. Apr 98 THE LIFE OF THE COSMOS, VPRO public television, The Netherlands
65. Jul 97 ALIENS: ARE WE ALONE?, Discovery Channel, Canada

BIBLIOGRAPHY

As of June 25, 2008 there are 1614 citations of my publications (source <http://adsabs.harvard.edu>).

Journal Abbreviations:

ApJ, Astrophys. J. - Astrophysical Journal

MNRAS, M.N.R.A.S - Monthly Notices of the Royal Astronomical Society

Refereed Publications

1. Dubinski, J. 2008, New Journal of Physics, in press, <http://arxiv.org/abs/0805.4397>
Visualizing Astrophysical N-body Systems
2. Widrow, L.M., Pym, B., & Dubinski, J. 2008, ApJ, 679, 1239
Dynamical Blueprints for Galaxies
3. Gauthier, J.-R., Dubinski, J., and Widrow, L.M. 2006, ApJ, 653, 1180
Substructure around M31: Evolution and Effects
4. Widrow, L.M., Dubinski, J. 2005, ApJ, 631, 838
Equilibrium Disk-Bulge-Halo Models for the Milky Way and Andromeda Galaxies
5. Feldmeier, J.J, Mihos, J.C., Morrison, H.L., Harding, P., Kaib, N., and Dubinski, J. 2004, ApJ, 609, 617
Deep CCD Surface Photometry of Galaxy Clusters II: Searching for Intracluster Starlight in Non-cD Clusters
6. Dubinski, J., Kim, J., and Park, C.B., Humble, R.J. 2003, New Astronomy, 9, 111
GOTPM: A Parallel Hybrid Particle-Mesh Treecode
7. Zhang, T., Pen, U.-L., Zhang, P., Dubinski, J. 2003, ApJ, 598, 818
Optimal Weak Lensing Skewness Measurements
8. O'Neill, J. and Dubinski, J. 2003, MNRAS, 346, 251
A Detailed Comparison of the structure and kinematics of simulated and observed bar galaxies
9. Pen, U.-L., Zhang, T., van Waerbeke, L, Mellier, Y., Zhang, P., Dubinski, J. 2003, ApJ, 592, 664
Detection of dark matter Skewness in the VIRMOS-DESCART survey: Implications for Ω_0
10. Dubinski, J., Humble, R. J., Loken, C., Pen, U.-L., Martin, P.G. 2003, in Proc. of the 17th Annual International Symposium on High Performance Computing Systems and Applications, May 11-14, 2003 Sherbrooke, PQ
Mckenzie: A Teraflops Linux Beowulf Cluster for Computational Astrophysics
11. Garcia-Ruiz, I., Kuijken, K. & Dubinski, J. 2002, M.N.R.A.S., 337, 459
The Warp of the Galaxy and the Large Magellanic Cloud
12. Millar, C.E., Basu, S., Dubinski, J. 2001, Astrophys. J., 551, 387
Intrinsic Shapes of Molecular Cloud Cores
13. Dubinski, J., Mihos, J.C., and Hernquist, L. 1999, Astrophys. J., 526, 607
Constraining Halo Potentials with Tidal Tails
14. Murali, C. and Dubinski, J. 1999, Astron. J., 118, 911-919
Determining the galactic mass distribution using tidal streams from globular clusters
15. Widrow, L.M. and Dubinski, J. 1998, Astrophys. J., 504, 12-26
Searching for Machos and other Dark Matter Candidates in a Simulated Galaxy
16. Dubinski, J. 1998, Astrophys. J., 502, 141
The Origin of the Brightest Cluster Galaxies
17. Mihos, J.C. and Dubinski, J. and Hernquist, L. 1998, Astrophys. J., 494, 183
Tidal Tales Two: The Effect of Dark Matter Halos on Tidal Tail Morphology and Kinematics
18. Dave, R. and Dubinski, J. and Hernquist, L., 1997, New Astronomy, 2, 277
Parallel TreeSPH

19. Dubinski, J. 1996, *New Astronomy*, 1, 133
A Parallel N-body Treecode
20. Norman, M.L., Beckman, P., Bryan, G., Dubinski, J., Gannon, D., Hernquist, L., Keahey, K., Ostriker, J.P., Shalf, J., Welling, J., & Yang, S. 1996, *International Journal of Supercomputing Applications*, 10, 132
Galaxies Collide on the I-WAY: An Example of Heterogeneous Wide-Area Collaborative Supercomputing
21. Dubinski, J., Mihos, J.C., & Hernquist, L. 1996, *Astrophys. J.*, 462, 576
Using Tidal Tails to Probe Dark Matter Halos
22. Kuijken, K. & Dubinski, J. 1995, *M.N.R.A.S.*, 277, 1341
Nearly Self-Consistent Disk-Bulge-Halo Models for Galaxies
23. Dubinski, J., Narayan, R., & Phillips T.G. 1995, *Astrophys. J.*, 486, 226
Turbulence in Molecular Clouds
24. Dubinski, J., & Kuijken, K. 1995, *Astrophys. J.*, 442, 492
The Settling of Warped Disks in Oblate Dark Halos
25. Kuijken, K., and Dubinski J. 1994, *M.N.R.A.S.*, 269, 13
Lowered Evans Models: Analytical Distribution Functions of Oblate Halo Potentials
26. Dubinski, J. 1994, *Astrophys. J.*, 431, 617
The Effect of Dissipation on the Shapes of Dark Halos
27. Dubinski, J., and Christodoulou, D. 1994, *Astrophys. J.*, 424, 615
Self-Gravity and Dissipation in Polar Rings
28. Huang, S., Dubinski, J., and Carlberg, R. G. 1993, *Astrophys. J.*, 404, 73.
Orbital Deflections in N-body Systems
29. Dubinski, J., da Costa, L., Goldwirth, D., Lecar, M., and Piran, T. 1993, *Astrophys. J.*, 410, 458.
Void Evolution and the Large-Scale Structure
30. Dubinski, J. 1992, *Astrophys. J.*, 401, 441.
Cosmological Tidal Shear.
31. Dubinski, J., and Carlberg, R. G. 1991, *Astrophys. J.*, 378, 496.
The Structure of Cold Dark Matter Halos
32. Carlberg, R. G., and Dubinski, J. 1991, *Astrophys. J.*, 369, 13.
Cluster Infall with Friction

Preprints

33. Dubinski, J., Humble, R. J., Pen, U.-L., Loken, C., Martin, P.G. 2003, astro-ph/0305109
High Performance Commodity Networking in a 512-CPU Teraflops Beowulf Cluster for Computational Astrophysics

Popular Science

34. Dubinski, J. 2006, *Sky and Telescope*, 112, 4, p. 36
The Great Milky Way-Andromeda Collision
35. Dubinski, J. & Farah, J.K. 2006, GRAVITAS: Portraits of a Universe in Motion, DVD video, <http://galaxydynamics.org/gravitas.html> (free download)
36. Dubinski, J. 2001, *Astronomy Now*, 15, 8, p. 56
When galaxies collide

Reviews and Conference Proceedings

37. Dubinski, J., Berentzen, I., & Shlosman, I. 2008, In proc. IAU Symp. 254 The Galaxy Disk in Cosmological Context, Copenhagen, Jun 9-13
Anatomy of the Bar Instability in Cuspy Dark Halos
38. Dubinski, J., Gauthier, J.-R., Widrow, L.M., Nickerson, S. 2008, In proc. Formation and Evolution of Disk Galaxies, ed. E. Corsini and J. Funes
Spiral and Bar Instabilities Provoked by Dark Matter Satellites
39. Dubinski, J., Geller, M.J., & Koranyi, D. 2003, In IAU Symposium 208, Astrophysical Supercomputing using Particles, ed. J. Makino and P. Hut,
The Evolution of Galaxies in Clusters
40. Dubinski, J., 1999, In *Galaxy Dynamics*, proceedings of a conf. held at Rutgers U., ed. D.R. Merritt, M. Valluri, J.A. Sellwood (PASP)
The Dynamical Evolution of Galaxies in Clusters
41. Garcia-Ruiz, I., Kuijken, K., & Dubinski, J., Balcells, M. 1999, In *Galaxy Dynamics*, proceedings of a conf. held at Rutgers U., ed. D.R. Merritt, M. Valluri, J.A. Sellwood (PASP)
Warps and Satellite Galaxies
42. Dubinski, J., Mihos, J.C., & Hernquist L. 1998, Invited talk in proceedings of the workshop on ‘Galactic Dark Halos’, Santa Cruz, Aug. 11-15 1997, ed. D. Zaritsky (PASP), p.260
Constraining dark halo potentials with tidal tails
43. Garcia-Ruiz, I., Kuijken, K., & Dubinski, J. 1998 In proceedings of the workshop on ‘Galactic Dark Halos’, Santa Cruz, Aug. 11-15 1997, ed. D. Zaritsky, p. 385
Warps and Secondary Infall
44. Widrow, L.M., Dubinski, J. 1998, In proceedings of the workshop on ‘Galactic Dark Halos’, Santa Cruz, Aug. 11-15 1997, ed. D. Zaritsky, p. 344
Searching for MACHOS in a Simulated Galaxy
45. Dubinski, J. 1996, Invited review to appear in proceedings of the workshop on ‘Aspects of Dark Matter in Astro- and Particle Physics’, Heidelberg, Sept 16-20 1996, eds H.V. Klapdor-Kleingrothaus and Y. Ramachers (World Scientific Press)
Dark Halos: Theory vs. Observation
46. Dubinski, J., da Costa, L., Goldwirth, D., Lecar, M., and Piran, T. 1992, in *Observational Cosmology*, eds. Guido Chincarini et al., (ASP: San Francisco), 188.
Void Evolution and the Large-Scale Structure.
47. Dubinski, J. 1992, in *The Third Teton Summer School on The Evolution of Galaxies and Their Environment*, eds. D. Hollenbach, H. Thronson, J.M. Shull, NASA Conference Publication 3190.
The Effect of Tidal Fields on the Structure and Kinematics of Dark Halos.