

Virgo Consortium Meeting

Thursday-Friday 29-30/Nov/01

Physics Department, Durham 2:15 pm

Thursday

2:00	–	2:15	Introduction (new machine, etc)	Carlos
2:15	–	2:30	Developments at MPA	Simon
2:30	–	2:40	New MPI-Hydra	Adrian
2:40	–	3:00	Gadget upgrades and ‘entropy-SPH’	Volker
3:00	–	3:20	Smooth Pressure Hydrodynamics	Peter
3:20	–	3:50	Coffee/tea	
3:50	–	4:05	Galaxy formation	Frazer
4:05	–	4:25	Comparison of SPH and semi-analytics	John H.
4:25	–	4:45	Discussion on SPH methods	all
4:45	–	5:15	Introduction to COSMA	Lydia
5:15	–	–	Visit to COSMA	all
7:00	–		Dinner	all

Friday

09:00	–	09:20	The Hubble volume paper	Gus
09:20	–	09:40	Impact of the Hub vol on analysis of 2dF	Carlton/Shawn
09:40	–	10:00	Initial conditions	Adrian
10:00	–	10:20	Halo profiles, GRAPE-6, etc	Vince
10:20	–	10:40	Converging on the correct halo profile	Chris
10:40	–	11:10	Coffee	
11:10	–	11:30	Mergers, wakes and cluster profiles	Peter
11:30	–	11:50	Cluster simulations	Joy
11:50	–	12:10	N-body/semi-analytic cluster simulations	Takashi
12:10	–	12:30	Feedback I	Scott
12:30	–	12:50	Feedback II	Vicent
12:50	–	01:10	Discussion	
01:10	–	02:00	Lunch	
02:00	–	02:20	Feedback III	Volker
02:20	–	02:40	The first stars	Greg
02:40	–	03:00	TBA	Tom
03:00	–	03:10	Other work at Munich	Simon
03:10	–	04:10	Future science programme	
			Halos project	
			Dark matter programme	
			Gas programme	
			Additional physics	
			(multi-phase, radiative trans, dust, etc)	
4:10	–	4:30	Tea	
4:30	–	end	Any other business	

Participants:

John Peacock

Robert Smith

Frazer Pearce

Guillermo Arreaga

Carlton Baugh

Vince Eke

Carlos Frenk

Adrian Jenkins

John Helly

Ben Moore

Peder Norberg

Takashi Okamoto

Chris Power

Vicent Quilis

Scott Kay

Joy Muanwong

Peter Thomas

Tom Theuns

Felix Stoehr (?)

Volker Springel

Simon White

Virgo publications: 1997–

This list includes papers written by the Virgo consortium and associates making extensive use of Virgo data.

Refereed journals:

- Abadi M., Moore B. & Bower R.G. 1999. Ram pressure stripping of spiral galaxies in clusters, MNRAS, 308, 947.
- Bartelmann, M., Huss, A., Colberg, J. M., Jenkins, A., & Pearce, F. R. 1998. Arc statistics with realistic cluster potentials. IV. Clusters in different cosmologies, A&A, 330, 1.
- Benson, A.J., Cole, S., Frenk, C.S., Baugh, C. & Lacey, C. 2000a. The Nature of Galaxy Bias and Clustering, MNRAS, 311, 793.
- Benson, A. J., Baugh, C., Cole, S., Frenk, C. S. & Lacey, C. 2000b. The dependence of Velocity and Clustering Statistics on Galaxy properties, MNRAS, 316, 107.
- Benson, A. J., Pearce, F. R., Frenk, C. S., Baugh, C. M. & Jenkins, A. 2000c. A Comparison of Semi-Analytic and Smoothed Particle Hydrodynamics Galaxy Formation, MNRAS, 320, 261-280.
- Calcaneo-Roldan C., Moore B., Bland-Hawthorn J., Malin D. & Sadler E. 2000. Galaxy destruction and diffuse light in clusters, MNRAS, 314, 324.
- Canavezes, A. Springel, V., Oliver, J., Rowan-Robinson, M., Keeble, O. White, S. D. M., Saunders, W., Efstathiou, G., Frenk, C. S., McMahon, R., Maddox, S., Sutherland, W. & Tadros, H. 1998. The topology of the IRAS Point Source Catalogue redshift survey, MNRAS, 297, 777.
- Ciardi, B., Ferrara, A., Governato, F. & Jenkins, A., 2000, Inhomogeneous Reionization Regulated by Radiative and Stellar Feedbacks, MNRAS, 314, 611.
- Colberg, J. M., White, S. D. M., Jenkins, A. & Pearce, F. R. 1999. Linking cluster formation to large-scale structure, MNRAS, 308, 593.
- Colberg, J. M., White, S. D. M., MacFarland, T. J., Jenkins, A., Pearce, F. R., Frenk, C. S., Thomas, P. A. & Couchman, H. M. P. 2000. Peculiar Velocities of Galaxy Clusters, MNRAS, 313, 229.
- Colberg, J. M., White, S. D. M., Yoshida, N., MacFarland, T. J., Jenkins, A., Frenk, C. S., Pearce, F. R., Evrard, A. E., Couchman, H. M. P., Peacock, J. A. & Thomas, 2000, The Clustering of Clusters in CDM Universes, MNRAS, 319, 209.
- Colombi, S., Szapudi, I., Jenkins, A. & Colberg, J. M. 2000. Experimental Cosmic Statistics I : Variance, MNRAS, 313, 711.
- Diaferio A., Kauffmann G., Colberg J. M., White S. D. M., 1999, Clustering of Surveys, MNRAS, 307, 537.
- Evrard, A. E., MacFarland, T. J., Couchman, H. M. P., Colberg, J. M., Yoshida, N., White, S. D. M., Jenkins, A., Frenk, C. S., Pearce, F. R., Efstathiou, G., Peacock, J. A. & Thomas, P. A. 2001, Galaxy Clusters in Hubble Volume Simulations: Cosmological Constraints from Sky Survey Populations, Astrophys. J., submitted (astro-ph/0110246)

- Frenk, C. S., White, S. D. M., Bode, P., Bond, R. J., Bryan, G. L., Cen, R., Couchman, H. M. P., Evrard, A. E., Gnedin, N. Jenkins, A., Khokhlov, A. M., Klypin, A., Navarro, J. F., Norman, M. L., Ostriker, J. P., Owen, J. M., Pearce, F. R., Pen, U.-L., Steinmetz, M., Thomas, P. A., Villumsen, J. V., Wadsley, J. W., Warren, M. S., Xu, G. & Yepes, G. 1999. The Santa Barbara cluster comparison project: a test of cosmological hydrodynamics codes, *Astrophys. J.*, 525, 524.
- Ghigna S., Moore B., Governato F., Quinn T., Stadel J. & Lake G. 1998. Dark matter halos in clusters, *MNRAS*, 300, 146.
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- Jenkins, A., Frenk, C. S., Pearce, F. R., Thomas, P. A., Colberg, J. M., White, S. D. M., Couchman, H. M. P., Peacock, J. A., Efsthathiou, G., & Nelson, A. H. 1998. Evolution of structure in cold dark matter universes, *Astrophys. J.*, 499, 20.
- Jenkins, A., Frenk, C. S., White, S. D. M., Colberg, J. M., Cole, S., Evrard, A. E., Couchman, H. M. P. & Yoshida, N., 2001. The mass function of dark matter haloes, *MNRAS*, 321, 372.
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- Kauffmann G., Colberg J. M., Diaferio A., White S. D. M., 1999. Clustering of Galaxies in a Hierarchical Universe: I. Methods and Results at $z = 0$, *MNRAS*, 303, 188.
- Kay, S. T., Pearce, F. R., Jenkins, A., Frenk, C. S., White, S. D. M., Thomas, P. A., Couchman, H. M. P., 2000, Parameter tests within cosmological simulations of galaxy formation, *MNRAS*, 316, 374.
- Kay, S. T., Pearce, F. R., Frenk, C. S. & Jenkins, A. 2001, Including star formation and supernova feedback within cosmological simulations of galaxy formation, *MNRAS*, (accepted - astro-ph/0106462)
- MacFarland, T, Couchman, H. M. P., Pearce, F. R., Pichlmeier, J. 1999. A New Parallel P³M Code for Very Large-Scale Cosmological Simulations, *New Astronomy*, 3, 687.
- Moore B. 1999. The dark side of the universe. *Phil.Trans.Roy.Soc.*, 357, no. 1763, 3259.
- Moore B., Ghigna S., Governato F., Lake G., Quinn T., Stadel J. & Tozzi P. 1999. Dark matter substructure in galactic halos, *ApJ Letters*, 524, 19-22.
- Moore B., Governato F., Quinn T., Stadel J. & Lake G. 1998. Resolving the structure of cold dark matter halos, *Astrophys. J. Lett.*, 499, L5.
- Moore B., Lake G., Quinn T. & Stadel J. 1999. On the survival and destruction of spiral galaxies in clusters, *MNRAS*, 304, 465.
- Moore B., Quinn T., Governato F., Stadel J. & Lake G. 1999. Cold collapse and the core

- catastrophe, MNRAS, 310, 1147.
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- Pearce, F. R., 1998, Placing stars within cosmological simulations, \grave{a} , submitted.
- Pearce, F. R. & Couchman, H. M. P. 1997. Hydra: an adaptive parallel grid code, New Astronomy, 2, 411.
- Pearce, F. R., Couchman, H. M. P., Thomas, P. A., Edge, A. C., 2000. The effect of radiative cooling on the radial density and temperature profiles of galaxy clusters, MNRAS, 317, 1029.
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- Pearce, F. R., Jenkins, A., Frenk, C. S., White, S. D. M., Thomas, P. A., Couchman, H. M. P., Peacock, J. A. & Efstathiou, G., 2001, MNRAS, 326, 649.
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- Theuns, T., Leonard, A., Efstathiou, G., Pearce, F. R. & Thomas, P. A., 1998, P³M-SPH simulations of the Lyman- α Forest, MNRAS, 301, 478.
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- Thomas, P. A., Muanwong, O., Pearce, F. R., Couchman, H. M. P., Edge, A. C., Jenkins, A. & Onuora, L., 2001. A simulated Λ CDM cosmology cluster catalogue: the NFW profile and the temperature-mass scaling relations, MNRAS, 324, 450.
- Yoshida, N., Colberg, J., White, S. D. M., Evrard, A. E., MacFarland, T. J., Couchman, H. M. P., Jenkins, A., Frenk, C. S., Pearce, F. R., Efstathiou, G., Peacock, J. A. & Thomas, P. A., 2001, MNRAS, 325, 803.

Non-Virgo papers making significant use of Virgo data

- Benson, A. J.; Nusser, A.; Sugiyama, N. & Lacey, C. G., 2001, Non-uniform reionization by galaxies and its effect on the cosmic microwave background, */mn*, 320, 153.
- Hoyle, F., Baugh, C. M., Shanks, T. & Ratcliffe, A., 1999, The Durham/UKST Galaxy Redshift Survey - VI. Power spectrum analysis of clustering, */mn*, 309, 659.
- Reblinsky, K., Krusc, G., Jain, B. & Schneider, P., 1999, Cosmic shear and halo abundances: Analytical versus numerical results, *ã*, 351, 815.
- Sheth, R. K. & Tormen, G., 1999, Large-scale bias and the peak background split, *MNRAS*, 308, 119.
- Canavezes, A. & Sharpe, J., 2001, Recovering the Topology of the Initial Density Fluctuations Using the IRAS Point Source Catalogue Redshift Survey, *MNRAS*, 326, 209.

Conference Proceedings:

- Bartelmann, M., Huss, A., Colberg, J. M., Jenkins, A. R., Pearce, F. R., 1997, On Arcs and Ω Large Scale Structure: Tracks and Traces. Proceedings of the 12th Potsdam Cosmology Workshop, held in Potsdam, September 15th to 19th, 1997. Eds. V. Mueller, S. Gottloeber, J.P. Muecket, J.Wambsganss World Scientific 1 998, p. 321-324. 12th Potsdam Cosmology Workshop, Potsdam, Germany (astro-ph 9709229).
- Colberg, J. M., White, S. D. M., Jenkins, A., Pearce, F. R., Frenk, C. S., Thomas, P. A., Hutchings, R., Couchman, H. M. P., Peacock, J. A., Efstathiou, G. P. and Nelson A. H. 1996, The Virgo consortium: The evolution and formation of galaxy clusters, Proceedings of Ringberg Workshop on Large Scale Structure Sept 1996 (astro-ph/9702086).
- Colberg, J. M., White, S. D. M., MacFarland, T. J., Jenkins, A., Frenk, C. S., Pearce, F. R., Evrard, A. E., Couchman, H. M. P., Efstathiou, G., Peacock, J. A., Thomas, P. A., 1998, Galaxy Clusters in the Hubble Volume Simulations, Proceedings of The 14th IAP Colloquium: Wide Field Surveys in Cosmology, Paris, May 26-30, 1998, eds. S. Colombi, Y. Mellier.
- Couchman, H. M. P., Thomas, P. A., Pearce, F. R., Jenkins, A. R., Frenk, C. S., Colberg, J. M., White, S. D. M., 1996, Supercomputer Simulations of Cosmic Structure: Hydra and the Virgo Experiments, *Journal of the Royal Astronomical Society of Canada*
- Couchman, H. M. P., Pearce, F. R., Thacker, R. J., Thomas, P. A., 1997, Simulations of Galaxy Formation and Clustering, Proceedings CASCA 1997.
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- Jain, B., Seljak, U. & White, S. D. M., 1998, Simulating weak lensing by clusters and large-scale structure, in *Evolution of Large-scale structure*, MPA/ESO, Garching, (astro-ph/9901287)
- Jenkins, A., Frenk, C.S., Pearce, F.R., Thomas, P.A., Hutchings, R. Colberg, J.M., White, S.D.M., Couchman, H.M.P., Peacock, J.A. & Efstathiou, G. (1997), The Virgo consortium: simulations of dark matter and galaxy clustering, in *Dark Matter 1996: Dark and Visible*

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- MacFarland, T., Pichlmeier, J., Pearce, F. R., Couchman, H. M. P., 1997, A Parallel P³M Code for Very Large Scale Cosmological Simulations, Proceedings of the 1997 European Cray/SGI MPP Workshop.
- Moore B., Ghigna S., Governato F., Quinn T., Stadel J. & Lake G. 1998. The structure and dynamics of cold dark matter halos, P.A.S.P., ed. D. Zaritsky, 426
- Pearce, F. R., 1996, Modelling the Universe, HPC News, 3, 10.
- Pearce, F. R., Couchman, H. M. P., Jenkins, A. R. & Thomas, P. A. (1996), Hydra - resolving a parallel nightmare, Proceedings of Dynamic Load Balancing on MPP Systems, held at CCLRC, Daresbury Laboratory, 27 November 1995, 14ppEmerson, D. R. Daresbury Laboratory.
- Pearce, F. R., Thomas, P. A., Hutchings, R. M., Couchman, H. M. P., Jenkins, A. R., Frenk, C. S., White, S. D. M., Colberg, J. M., 1996. "Simulating the Universe", Proceedings PDP 97, IEEE.
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