the three-parameter Einasto model (Einasto 1965) which Navarro et al. (2010) found to give a good fit to the profiles of the DM-only runs. We found that, in all cases, the formation of the galaxy increased the concentration of the halo producing approximately isothermal density profiles in the central regions. In all cases the SPH and DM-only profiles cross at, or slightly inside the baryonic radius defined as the one containing 83 per cent of its stars and cold gas. Inside the peak, they are relatively flat and approximately isothermal (Tissera et al. 2010).

The baryons also substantially affected the velocities of DM particles within the baryonic radius of the central galaxy. The resulting velocity dispersion in the central regions decreases monotonically with radius, in contrast to the behaviour seen in DM-only simulations which show "temperature inversion".

We also analysed the shape of our DM haloes. When baryons condensed to form a galaxy in the inner regions, haloes become rounder and approximately oblate in agreement with several observational estimations. We measured the shapes of haloes by using the method of Dubinski & Calberg (2008). Initially triaxial shapes become much more oblate in the baryon dominated regions.

Finally, we compared our results with different analytical prescriptions. As expected we found that B86 largely overpredicts the level of concentration (up to 50 percent or so) and also changes the shape of the DM distribution; G04 and A09 provides a better representation where the disagreement is not so important.

The analysis of these high resolution simulations confirmed that the history of assembly of baryons is a crucial process which needs to be understood before being able to explain the DM properties at galactic scale.

SEP thank the Organizing Commitee for its partial financial support to attend this meeting. We acknowledge support from the PICT 32342 (2005) and PICT 245-Max Planck (2006) of ANCyT (Argentina).

REFERENCES

Abadi, M. G., Navarro, J. F., Fardal, M., Babul, A., & Steinmetz, M. 2010, MNRAS, 407, 435 (A10)
Blumenthal, G. R., Faber, S. M., Flores, R., & Primack, J. R. 1986, ApJ, 301, 27 (B86)
Dubinski, J., & Carlberg, R. G. 2008, ApJ, 378, 496
Einasto, J. 1965, Trudy Inst. Astrofiz. Alma-Ata, 51, 87
Gnedin, O. Y., Kravtsov, A., Klypin, A., & Daisuke, N. 2004, ApJ, 616, 16 (G04)
Navarro, J. F., Ludlow, A., Springel, V., Wang, J., Vogelsberger, M., White, S. D. M., Jenkins, A., Frenk, C. S., & Helmi, A. 2010, MNRAS, 402, 21
Pedrosa, S., Tissera, P. B., & Scannapieco, C. 2009, MNRAS, 395, L57
Pedrosa, S., Tissera, P. B., & Scannapieco, C. 2010, MNRAS, 402, 776
Scannapieco, C., Tissera, P., White, S. M. D., & Springel, V. 2008, MNRAS, 389, 1137
Springel, V., et al. 2008, MNRAS, 391, 1685
Tissera, P. B., White, S. D. M., Pedrosa, S., & Scannapieco, C. 2010, MNRAS, 406, 922