

In the same way, it is to expect that the effect of energy dissipation that involves gravitational waves emission, as occurs in binary systems, needs to be corrected.

¹ Departamento de Física, Universidad Nacional de Colombia, Campus Bogotá, Bogotá, Colombia (cdrodriguezc@unal.edu.co).

² Observatorio Astronómico Nacional, Universidad Nacional de Colombia, Campus Bogotá, Bogotá, Colombia (ealarranaga@unal.edu.co).

ANISOTROPIC HALO MODEL

M. A. Sgró¹, D. J. Paz¹, M. E. Merchán¹, and F. Rodríguez¹

We present an extended version of the classic halo model for the large-scale matter distribution which includes a triaxial model for the halo density profiles, a probabilistic distribution of the halo shape and a probabilistic law describing the alignment of the surrounding structure. In particular, we derive general expressions for the halo-matter cross-correlation function. Using a Monte Carlo integration method we obtain instances of the cross-correlation function depending on the directions given by halo shape axes. These functions are called anisotropic cross-correlations. We have found that our model is able to reproduce the numerical measurements of those functions over a wide range of scales, particularly in the 2-halo regime. The parameters of the model obtained by fitting numerical results recover the well known mass dependence of halo shapes and the alignment of dark matter halos with the surrounding structure. In this sense, most massive halos tend to have a less spherical shape and more prolate mass profile. In addition, we have found that taking the triaxial nature of dark matter halos into account improves at least %15 the predictions of the standard halo model (as noted by others authors before).

Finally, we are working on the development of a similar model in order to compare theoretical predictions with anisotropic correlation functions measured on galaxy group catalogues. These results will appear in a forthcoming paper.

¹ Instituto de Astronomía Teórica y Experimental, CONICET-UNC, Laprida 854, Córdoba, Argentina. (marioagustin@oac.uncor.edu).

THE TYPE IA SUPERNOVA PIPELINE FOR THE JAVALAMBRE PHYSICS OF THE ACCELERATING UNIVERSE ASTROPHYSICAL SURVEY (J-PAS)

B. B. Sifert¹, R. R. R. Reis¹, and M. O. Calvão¹

The Javalambre Physics of the Accelerating Universe Astrophysical Survey (J-PAS) is an astronomical facility being built in Sierra de Javalambre, Spain. The main goal is to study the expansion of the Universe through different cosmological observables such as baryonic acoustic oscillations, type Ia supernovae and galaxy clusters. The main instrument will be a 2.5 m telescope equipped with a system of 56 narrow band filters in the optical. Here we present a sketch of the pipeline we are developing to detect type Ia supernovae with J-PAS. First we describe each individual step of the pipeline, such as image subtraction and source selection. Then we show some results we obtained when applying our pipeline to images from the Sloan Digital Sky Survey and the ALHAMBRA survey, which had a set of narrow band filters similar to the ones that will be used by J-PAS.

¹ Instituto de Física, Universidade Federal do Rio de Janeiro, Av. Athos da Silveira Ramos, 149, 21941-972, Rio de Janeiro, Brazil (beatriz@if.ufrj.br).

THE RED SEQUENCE OF AXU CLUSTERS

J. J. Trejo-Alonso^{1,2}, C. A. Caretta¹, T. F. Laganá^{2,3}, L. Sodré Jr.², E. Cypriano², G. B. Lima Neto², and C. Mendes de Oliveira²

We present an analysis of the colour-magnitude relation for a sample of 54 Abell X-ray underluminous (AXU) clusters aiming at unveiling properties that may elucidate the evolutionary stages of the galaxy populations which compose such systems. We compared the parameters of their colour-magnitude relations with the ones found for another sample of 50 Abell X-ray “normal” (AXN) emitting clusters. The g and r magnitudes from the SDSS-DR7 were used for constructing the colour-magnitude relations.

We found that both samples show the same trend: the red sequence slopes change with redshift, but the slopes for AXU clusters are always flatter than AXN clusters, by a difference of about 42% along the surveyed redshift range of $0.05 \leq z < 0.20$. Also, the intrinsic scatter of the colour-magnitude relation was found to grow with redshift for both samples, but for the AXU clusters, this is systematically