possible effects of the interaction of the CBR with the opaque material of the bubble and found that this interaction introduces temperature fluctuations in the CBR which are much smaller than the values measured by the COBE. On the other hand, seeking a possible correlation with the fractal distribution of the CBR maps, we have examined the matter distribution of the bubble in the 21 cm wavelength and found that it has a fractal distribution with a fractal dimension D = 1.44±0.06 which is the same as the one obtained for the CBR (D = 1.43±0.07), thus implying there is a possible correlation between both distributions. The results above indicate that the CBR temperature fluctuations *may be* contaminated by the bubble material.

MICROLENSING DETERMINATION OF ISOLATED PULSAR MASSES

J.E. Horvath[1]

Observations of microlensing events are becoming a major tool to investigate the galactic dark populations. When applied to *known* objects, the observations could, in principle, provide direct and unique determinations of the object's mass for a given set kinematic parameters. We show here that one member of the present pulsar population (as observed in radio wavelengths) has a 0.25 probability of lensing a background star in the next decade, and discuss how such an event(s) determine the pulsar mass together with the expected uncertainties. This may be the only way to measure isolated dark object masses which are very important to understand the state of matter at extreme conditions.

[1]Instituto Astronômico e Geofísico, Universidade de São Paulo, Brazil

---

CLUSTERS OF GALAXIES: THE GALAXY LUMINOSITY FUNCTION

Diego G. Lambas [1,2], Hernan Muriel [1,2], Mariano Nicotra [1], and Carlos Valotto [1]

We perform a statistical analysis to derive the luminosity function of galaxies in clusters and explore its dependence on cluster global properties. The data consist of two different samples of southern clusters with published redshifts taken from the Abell cluster catalog (Abell, Corwin, & Olowin 1989, ApJS 70, 1) and the APM cluster catalog (Dalton, Efsthatiou, Maddox, & Sutherland 1994, MNRAS 269, 151). Galaxy assignment to clusters and their corresponding apparent magnitudes were derived from the Edinburgh-Durham Southern Galaxy Catalogue, (Heydon-Dumbleton, Collins, & MacGillivray 1989, MNRAS 238, 379). We have considered two limiting absolute magnitudes $M < -16$ and $M < -17$ comprising 16 and 54 clusters respectively.

The derived galaxy luminosity function in clusters presents a large excess of faint galaxies compared to the field. We also find a tendency for a steeper galaxy luminosity function in richer clusters. A Schechter function with parameters $M^* \simeq -19.9 \pm 0.1$, $\alpha \simeq -1.41 \pm 0.10$ provides a satisfactory fit to the galaxy luminosity function of the sample of 54 clusters. In spite of their different identification procedure we obtain similar luminosity functions for Abell and APM clusters.

The results presented in this work do not depend significantly on the different background corrections applied nor on errors in magnitudes which have been properly taken into account.

[1]Observatorio Astronómico de Córdoba, Argentina

[2]CONICET, Argentina

RADIO POLARIZATION OBSERVATIONS OF THE MISALIGNED QUASAR 3C216

Everton Lüdke[1], Chidi E. Akujor[2], and Richard W. Porcas[3]

We present MERLIN, VLA and VLBI observations of 3C216, a powerful radio quasar with both blazar and CSS properties. The radio structure shows a bright core-jet straddled by misaligned and asymmetric components, all embedded in a diffuse halo of $\sim$ 8 arcsec extension. It shows a striking depolarization asymmetry with $\lambda_{1/2} \sim 4$ cm, which is typical of compact steep-spectrum sources which often exhibit very high rotation measures > 1000 cm^{-3} μG.

The balance of evidence suggests that although projection effects may be present in 3C216, it is a galactic-sized source which is extremely disrupted possibly by a medium with $< n_e B_z > \sim$ 3 orders of magnitude in extended FRII sources.

[1]UFSM/NEPAE-Centro de Tecnologia, Brazil

[2]School of Physical Sciences, Imo State University, Owerri, Imo State, Nigeria

[3]Max-Planck Institut für Radioastronomie, Germany