

B9

Performance of a prototype radial-drift chamber with
logarithmic potential-division

B. Anderson, D. Attree, A. Charalambous, P.R. Hobson,
D.J. Miller, I. Roberts (Birkbeck College).

Tests have been made on a 30 degree segment ("pie slice"), with inner radius 100 mm, outer radius 300 mm and depth 30mm. The field-shaping electrodes are logarithmically spaced concentric copper strips on the upper and lower printed circuit boards, connected through vertical strips on the walls. Two horizontal sense-wires are mounted one above the other at the outside of the chamber. A fine glass hook at its centre stretches each wire into two 15 degree chords to the segment circumference. Both ends of each wire are read-out with low impedance preamplifiers, allowing both radial (TDC) and azimuthal (ADC charge-division) coordinates to be measured. Data from cosmic ray observations will be reported. (This is one of the prototypes for the forward detector tracking chamber for the OPAL experiment at LEP).

B10

Influence of the Cathode on the Neutralization of Complex
Ions in Proportional Counters and MWPC's

Kazimierz W. Ostrowski, Tadeusz Z. Kowalski, Juliusz Zajac
Institute of Physics and Nuclear Techniques, Academy of
Mining and Metallurgy, Krakow, Poland

Long living mixtures appropriate for filling counters operating under high gas gain are characterized by the existence of correlations between the complex ions energy J , its predissociation potential D and the cathode work function φ . For cathodes with $J - \varphi > \varphi$ and $J - \varphi < D$, at $D > J/2$ high undesirable secondary current is observed proportional to gas gain in second order due to neutralization of complex ions on the surface of the cathode.