CHARACTERISTIC SIZE OF SUPERCLUSTERS

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A new processing of the surface distribution of clusters from the catalogues of Abell and Zwicky has been carried out for an area of 2000 square degrees around the NGP. Four statistical tests (M. Kalinkov, I. Kuneva, 1980, C.R. Acad. Bulg. Sci., 33, 1305) are applied to search apparent characteristic sizes. Assuming a mean distance R = 440 h^{-1} Mpc (H_o = 100 h km s^{-1} Mpc^{-1}) to Abell clusters, a characteristic size Q = 52 Mpc for superclusters has been obtained. For Distance Group 5 (R = 400 Mpc) and for Distrance Group 6 (R = 530 Mpc), we have Q = 48 Mpc and Q = 40 Mpc, respectively. For Zwicky D clusters (R = 390 Mpc, assuming a uniform distribution in the volume from 300 to 450 Mpc, Q = 55 Mpc and for ED clusters R ≈ 650 Mpc), Q = 46 Mpc. Therefore, the mean characteristic size of superclusters is 50 h^{-1} Mpc. There is an exception, however, for VD clusters (R = 540 Mpc) for which Q ≈ 100 h^{-1} Mpc.

G. O. Abell and G. Chincarini (eds.), Early Evolution of the Universe and Its Present Structure, 187.