A CLUSTERING METHOD APPLIED TO THE ANALYSIS OF PLANETARY NEBULAE

O.S.YATSYK

Astronomical Observatory, L'viv State University Lomonosov St., 8, L'viv 290005 Ukraine

Intensities of the observed spectral lines, radio fluxes and H_β fluxes are used for the classification of planetary nebulae by centroid method of taxonomical analysis. Two variants of classification are proposed. The first one– in the three–dimensional space of relation of intensity of spectral lines He II λ 4686/HeI λ 4471, [OIII] λ 4959+5007/[OII] λ 3726+29, [OIII] λ 4959+5007/[OIII] 4363. The second variants is the classification in the three-dimensional space with cooordinates being radio flux, H_β flux and [OIII] λ 4959+5007 intensity. The membership of classes (taxons) are presented. In the diagram joining the planetary nebula descriptors pairwise there are regions of complete (or predominant) of nebulae belonging to the same taxon, but there are also some regions of overlap. The corresponding taxons are not isolated but merge continuously into one another.