Publ. Astron. Obs. Belgrade No. 86 (2009), 419 *Master thesis*

APPLICATION OF ARTIFICIAL NEURAL NETWORK TO THE CLASSIFICATION OF STELLAR SPECTRA

D. ZARIĆ

Department of Astronomy, Faculty of Mathematics, Studentski trg 16, 11000 Belgrade, Serbia
E–mail: dragoslav_zaric@hotmail.com

Abstract. The application of an artificial neural network (ANN) based on a multi-layered back-propagation algorithm to the classification of stellar spectra is presented. Using a part of catalogue's data in the training process, network learns to associate the appearance of a visual spectrum (hydrogen Balmer lines, continuum shape) with the classification parameters (MK spectral types). The performance of the network is evaluated by using it to classify the remaining data set and by comparing this ANN classification with the original catalogue one. ANN code is written in C++. It uses back-propagation algorithm for training and an approach that can be best described as "associative memory model" for prediction (classification).

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