METHODS OF SPACEWEATHER SITUATIONS CLASSIFICATION RULES CONSTRUCTION

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The problem of finding out which exactly helio-geomagnetic and spaceweather factors' (GMAF) (e.g., Sun factors, Earth factors, etc.) and their combinations may influence human health mostly remains unsolved. The second problem is to find out what categories of people suffer from the acute vascular diseases caused by these factors. Present work is the sequel of this theme research (Sayapina et al., 2012).

The present research's goal is methods and algorithms of strokes provoking spaceweather situations classification rules construction. Semantic GMAF dynamics description methods, machine learning (on examples) methods and intellectual data analysis methods used in decision support system (DSS) "Consilium" were used for solution method constructing (Karp, 2006).

The research's object is a date in combination with a stroke presence/absence fact. Prognostically significant derivative features describing three previous days dynamic were created. Problem oriented database was formed.

One of the most important results is knowledge database which contains classification rules – stable GMAF complex' meanings combinations characterizing each spaceweather situations classes comparing – class "0" (non-provoking strokes situations) and class "1v2" (provoking strokes situations).

Classification rules (built using Sun and Earth factors and pathogenicity indexes separately and their various combinations) capacity is shown. The report includes recognition quality rating: diagnosis refusal, mistakes and right answers quantity is counted.

The results received prove the chosen method using prospects for the problem described.