Neural Network Algorithms for Remote Sensing Data Processing

Specialists of ScanEx RDC will hold a workshop on 28th April within the framework of the Geo-Siberia forum (Novosibirsk, Russia), dedicated to the use of neural networks for space images classification. "Neural Network Algorithms - the Most Effective Tool for Remote Sensing Data Thematic Processing" workshop is to take place in Conference Hall 3 of the International Exhibition Complex Siberian Fair from 15:00 to 17:00.

The participants will be able to learn the specifics of automatic algorithms of the RS data classification for space imagery data interpretation and generation of different thematic maps.

ScanEx specialists will speak about the analysis and RS spectral data classification algorithms, based on the application of self-organising Kohonen neural networks, as well as about the methods of building thematic legends and vectorisation of space images processing results.

Neural network algorithms are introduced by ScanEx specialists into the ScanEx Image Processor, intended for a complete cycle of remote sensing data processing, and are integrated into the ThematicPro RS data thematic interpretation module.

The following issues will be covered during the workshop:
- analysis of the object spectral properties and selection of spectral bands for classification;
- algorithm of multi-band image classification using neural network self-organizing method. Classification results analysis using Sammon's mapping, building of thematic legends;
- comparison of neural network classification methods with other methods of automatic processing, analysis of classification results using the tools of Thematic Pro module.

The principal tools used, when solving interpretation tasks, are the topographic maps (TM), such as artificial Kohonen neural networks (SOM - Self Organising Map), used for ordination, classification and thematic interpretation and generative topographic mappings, offered in Bishop's studies (GTM - Generative Topographic Mapping). Possibilities and advantages of applying Thematic Pro algorithms will be demonstrated using space images interpretation as an example.

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