



ELEKTROTEHNIČKI FAKULTET UNIVERZITETA U BEOGRADU I  
IEEE SCG SECTION, CAS-SP JOINT CHAIR ORGANIZUJU

PREDAVANJE

## **Data Mining Support for Aerosol Optical Depth Retrieval and Analysis**

**(Računarska podrška u pretraživanju baza podataka za analizu i  
procenu optičke debljine aerosola)**

Predavač

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### **Abstract:**

Aerosol Optical Depth (AOD) indicates the amount of depletion that a beam of radiation undergoes as it passes through the atmosphere. One of the biggest challenges of current climate research is to characterize and quantify the effect of AOD on the Earth's radiation budget. We will describe a novel data mining method for improving AOD prediction or so called retrieval accuracy based on training neural networks that take advantage of high resolution satellite observations and collocated high quality ground based measurements. The experimental results obtained using thousands of observations over the entire globe suggest that ensembles of neural networks are more accurate than the operational MODIS AOD retrieval algorithm. Our study of differences between neural networks and the MODIS algorithm over the continental United States also revealed information that can help improve quality of the MODIS algorithm.

The reported results were obtained through a collaboration with Bo Han, Zhanqing Li, Wen Mi, Vladan Radosavljevic and Slobodan Vucetic, funded by NSF IIS-0612149 research grant.

### **About speaker:**

Zoran Obradovic is Director at the Center for Information Science and Technology and a Professor of Computer and Information Sciences at Temple University. His research interests focus on developing data mining and statistical learning technology for efficient knowledge discovery at large databases. Funded by NSF, NIH, NIJ, DOE and industry he contributed to about 190 refereed articles on these and related topics and to several academic and commercial software systems.

For more details see [www.ist.temple.edu/~zoran](http://www.ist.temple.edu/~zoran)