



УНИВЕРЗИТЕТ  
У НОВОМ САДУ



ФАКУЛТЕТ  
ТЕХНИЧКИХ НАУКА

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ИНТЕГРИСАНИ  
СИСТЕМ  
МЕНАџМЕНТА  
СЕРТИФИКОВАН ОД:



168. Sastanak IEEE u Novom Sadu /168<sup>th</sup> IEEE Meeting  
in Novi Sad  
**Obaveštenje / Announcement**

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ће у **utorak, 10. 07. 2018.** у Svečanoj sali  
Fakulteta tehničkih nauka у Novom Sadu, sa  
početkom у **12:00h**, održati

On **Tuesday, July 10, 2018**, in the Ceremonial  
Hall of the Faculty of Technical Sciences Novi Sad  
at **12:00 am** will deliver

## P R E D A V A N J E L E C T U R E

### DYNAMIC SECURITY REGION ASSESSMENT: VOLTAGE IMPASSE REGIONS AND THEIR EFFECTS ON POWER SYSTEM STABILITY

**Abstract:** Identification of the power system security region is an important and timely issue. This region is where the risk of instability is considered to be acceptable. In dynamic security analysis, stability phenomena are described by a set of Differential-Algebraic Equations (DAE). A complete picture of the security region can never be given by only looking at one phenomenon (type of stability) at a time since different stability criteria may be limiting depending on the operating state. The aims of this lecture are: to provide the audience with an overview of existing rotor-angle stability assessment procedures while focusing on the “parametrization of the stability region”; to present the novel research findings that analytically defined “Voltage Impasse Regions (VIRs)”. VIRs have been introduced to denote the areas of the state-space where voltage causality is lost (i.e. the system of DAE experiences singularity), and to discuss how VIR affects the stability region, with respect to load modelling and load size. In this sense, the lecture will assert the coupling between short-term voltage and large-disturbance rotor angle instability.

*Katedra za elektroenergetiku i primenjeni softverski inženjering i*



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