

PREDAVANJE prof. dr VIKTORA URUMOVA

U okviru **SEENET-MTP mreže** (Mreža zemalja Jugoistočne Evrope u oblasti teorijske i matematičke fizike, <http://seenet-mtp.info/>), UNESCO projekta „Training and Mobility Program; Promotion of excellence and growing of the youth's interest for education in Physics and Mathematics“, koji realizuju Fizički fakultet u Krajevi (Rumunija) i Prirodno-matematički fakultet u Nišu (Katedra i Centar za teorijsku fiziku Prirodno-matematičkog fakulteta u Nišu), najavljujemo predavanje pod nazivom

"TIME-DELAY FEEDBACK CONTROL OF NONLINEAR OSCILLATORS"

Predavač je prof. dr Viktor Urumov, sa Prirodno-matematičkog fakulteta Univerziteta Sv. Ćirilo i Metodije u Skoplju, Makedonija.

Abstract:

In the introductory part several examples of nonlinear oscillators will be provided, such as van der Pol, Lorenz and Roessler models, commonly present in the current literature related to studies of simple dynamic systems with complex behavior. Another well known system of phase oscillators analytically solved by Kuramoto undergoes phase transition into synchronized state when the strength of coupling between oscillators exceeds some critical value.

The main part of the lecture will provide information on recently published results on stabilization of unstable fixed points of nonlinear oscillators. The stabilization is successful in wider domain and becomes more robust when the feedback term of Pyragas type contains varying delay. The method is first applied to individual oscillators defined by systems of ordinary differential equations and systems described by time-delay equations, e.g. the equation of Mackey-Glass, and then to systems of coupled nonlinear oscillators introduced to model the behavior of neurons.

Predavanje će biti održano u sredu, 29. juna 2010. godine od 12:00 časova, u Svećanoj Sali (prvi sprat) Prirodno-matematičkog fakulteta u Nišu (Višegradska 33).