Др Бане Васић, професор Универзитета у Аризони (Тусон, САД) одржао је на Природно-математичком факултету,   у петак, 28. јуна 2013.године, предавање на тему: "Decoding of codes on graphs by message passing".

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ABSTRACT: We introduce a generic approach for improving the guaranteed error correction capability of regular low-density parity check codes.
The method relies on operating (in serial or in parallel) a set finite-alphabet iterative decoders. The message-passing update rules are judiciously chosen to ensure that decoders have different dynamics on a specific finite-length code. The idea is that – for the binary symmetric channel – if some error pattern cannot be corrected by one particular decoder, there exists in the set of decoders, another decoder which can correct this pattern. We show how to select plurality of message update rules so that the set of decoders can collectively correct errors patterns on the dominant trapping sets, and approaches performance of maximum likelihood decoding for finite-length regular, column-weight three codes.

BIOGRAPHY: Dr. Bane Vasić is a Professor of Electrical and Computer Engineering and Mathematics at the University of Arizona, Tucson. Prior to this appointment, he was at Bell Laboratories. He developed a decoding algorithm that is implemented in virtually all of today's magnetic hard drives. His research interests include coding theory and constrained systems and their applications. His current project include codes on graphs, and applications of information and coding theory to transmission over long haul fiber optics and free-space-optics turbulent channels, nano-scale and memories for space missions, heat-assisted magnetic recording, gene regulatory networks, and statistical physics.