Πανεπιστήμιο Κύπρου
University of Cyprus

Department of Electrical and Computer Engineering

Title: *" Routing and Wavelength Assignment in Optical Networks"*

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Room KENTP. – A008, Old Campus
University of Cyprus

Abstract: In a wavelength division multiplexing (WDM) network, each fiber link carries high-rate traffic at several different wavelengths, thus creating multiple channels within a single fiber. The most common architecture utilized for establishing communication in WDM optical networks is wavelength routing, where optical pulse-trains are transmitted through lightpaths, that is, all-optical WDM channels that may span multiple consecutive fibers. An important problem in optical networks is to select the routes for the requested connections and to assign wavelengths on each of the links along these routes. This is known as the routing and wavelength assignment (RWA) problem. In a transparent or translucent network, where the signal on a lightpath remains in the optical domain, the quality of transmission (QoT) is significantly affected by physical limitations of fibers and optical components. The RWA problem in the presence of physical layer impairments is referred as Impairment aware (IA-) RWA. In this talk we will present RWA algorithms that take into account physical layer impairments and other constraints and can be used during optical network planning and network operation.

Biography: Konstantinos Manousakis is a Research Fellow at KIOS Research Centre for Intelligent Systems and Networks. He holds a Diploma (2004) in Computer Engineering and Informatics from the University of Patras, Greece, an MSc (2007) and a PhD (2011) from the same department. In parallel to doctoral research, he was able to contribute to Greek and EU projects, in the field of optical networks. He also worked in the Networking Technologies Sector (NTS) of the Research Academic Computer Technology Institute as a Computer Engineer. NTS focus on the planning and the implementation of networking infrastructures, telematic services and optical networks. His current research interests include optimization algorithms for high speed optical networks, impairment aware routing and wavelength assignment algorithms, network planning and operation tools, protection and restoration techniques for optical networks, energy optimization algorithms in optical networks and techno-economic aspects of telecom networks.