Modern Navigation

Prof. Kiril Alexiev

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1. **Fundamentals of GPS Navigation** - *Wednesday 8 March 2017 – 9.00-12.00*
Aula Seminari ELN, piano D, Dip. Ingegneria Industriale e dell'Informazione, Via Ferrata 5, Pavia

2. **Inertial Navigation Systems** - *Thursday 9 March 2017 – 9.00-12.00*
Aula Seminari ELN, piano D, Dip. Ingegneria Industriale e dell'Informazione, Via Ferrata 5, Pavia

3. **Integration of GPS and INS** - *Friday 10 March 2017 – 11.00-13.00*
Aula Seminari INF, piano D, Dip. Ingegneria Industriale e dell'Informazione, Via Ferrata 5, Pavia

ABSTRACT
Navigation is a technique for the determination of position and attitude. Two breakthroughs in navigation technology have been done in 20-th century. Advances in microelectronics and miniaturization of integrated circuits have facilitated the production of inexpensive inertial sensors, receivers of satellite positioning systems and powerful computing units. Earlier high secret military technologies for positioning and orientation are now in the pocket of every one of us, embedded in so called smart devices. Implementation of modern navigation technologies in contemporary non-stationary world is an actual problem today. This short course of lectures is a self-contained introduction on navigation. It gives a short review of navigation tools progress in centuries, a description of modern global navigation satellite systems, inertial navigation systems and the combination of the two. The content of presentation is intentionally kept on the conceptual level with a minimum of mathematics.

Bio: Assoc. Prof. PhD Kiril Alexiev is head of the Department of Mathematical Methods for Sensor Information Processing of the Institute of Information and Communication Technologies of the Bulgarian Academy of Sciences in Sofia, Bulgaria. He is member of IEEE, of the Bulgarian Automation and Information Systems Society and of the Union of Bulgarian mathematicians. He received his Ph.D. in 1997 discussing a thesis on "Radar and Navigation systems". His professional experiences and research interests include: computer aided design of digital circuits, multi-sensor multi-target tracking, data and information fusion, sensor networks, image processing and super-resolution. He is involved in international and national projects. http://mmsip.bas.bg/

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