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Automatic Control & Systems Engineering.

The Department of Automatic Control & Systems Engineering is pleased to announce the following seminar:

Radiative MHD modelling of the solar photosphere

Speaker: **Dr Sergiy Shelyag**
Monash Centre for Astrophysics
Monash University

Friday, 23rd August 2013 at 15:30

Location: LT02, Sir Henry Stephenson Building

Abstract

Understanding the physical processes in the interconnected solar interior and atmosphere requires realistic numerical modelling of these solar regions as well as detailed radiative diagnostics of the simulated solar models. This diagnostics allows us not only to validate and improve numerical models and, thus, our knowledge about the physics of the Sun, but also suggests an attractive possibility to predict the observational representation of various processes in the solar plasma and therefore to develop the observational strategies for the solar observations. I will discuss the methods and techniques of realistic solar numerical modelling and radiative diagnostics, and demonstrate few examples on how solar modelling can be applied to studies of waves and flows in the solar interior and the photosphere, and to stellar physics and exoplanetary research.

Sergiy Shelyag was born in Ukraine (1979), moved for PhD in 2001 to Germany (Max-Planck Institute for Solar System Research), then moved for postdoc to Sheffield (2005), then to Belfast (2009), then suddenly got Australian Research Council Future Fellowship (2012), and currently works at Monash University, Melbourne, Australia. Sergiy's main research interests and experience concentrate on large-scale mathematical modeling of astrophysical processes, astrophysical plasma physics, numerical hydrodynamics and magnetohydrodynamics (MHD), numerical radiative transport and spectropolarimetry with applications to the solar and stellar atmospheres.