



CENTRO DE INVESTIGACIÓN Y DE ESTUDIOS AVANZADOS DEL IPN

El Departamento de Control Automático

invita cordialmente a su

Seminario Departamental

Current Challenges in Vision-Based Driver Assistance Systems

**Professor Reinhard Klette,
*The University of Auckland, New Zealand***

Martes 27 de Abril, 2010, a las 11:00 horas, en el Salón de Usos Múltiples, Planta Baja del Depto. de Control Automático, CINVESTAV-IPN, Unidad Zacatenco, D.F.

The talk starts with informing briefly about the area of vision-based driver assistance systems (DAS) in general, and the “enpeda” project at The University of Auckland in particular. Lane and corridor detection is a traditional DAS subject, and curved and unmarked roads define still a challenge. A solution for corridor (i.e., the expected space to drive in) detection is discussed based on applying the Euclidean distance transform. The main part of the talk is then about current stereo and optic flow algorithms on real-world (stereo) sequences. Prediction error analysis and evaluations on synthetic DAS sequences are discussed as possible options, and conclusions are drawn, such as the suggestion that correspondence algorithms should use residual images as input rather than the original sequences. Finally, the talk discusses the performance of vision-based DAS for particular situations (or scenarios), defined by the occurrence of events such as “close objects”, “oncoming traffic in the night”, or “illumination artifacts”.

Reinhard Klette is one of the personalities in the world who have developed the most important contributions to Digital Image Processing and Analysis and to Computer Vision, in particular to Combinatorial Image Analysis, Digital Geometry and to the Fundamentals for 3D Artificial Vision. He has published 8 Monographs, over 230 Journal and full Conference papers, he is member of the Editorial Boards of the most prestigious Journals in related fields, and he has been Plenary speaker at numerous important Conferences.