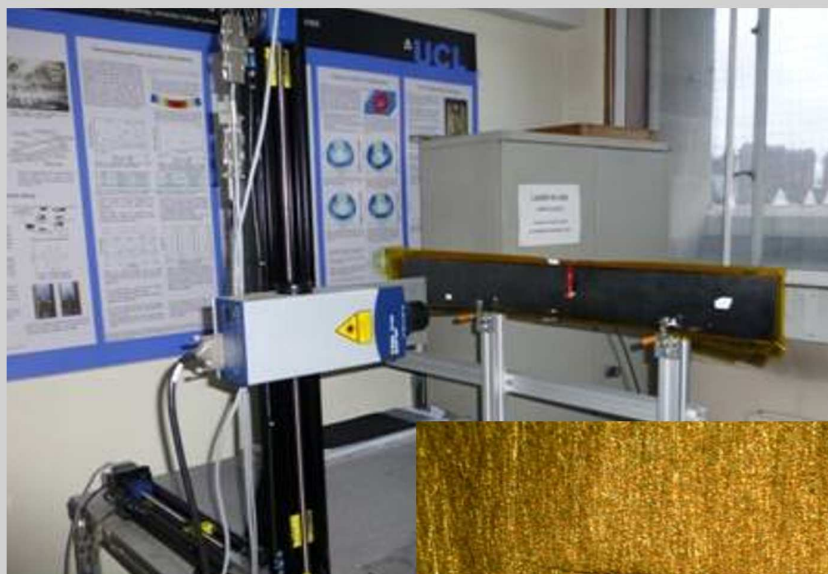




SEMINARIO JOSÉ ANTONIO GARCÍA GARCÍA
MÁSTER DE ESTRUCTURAS
DOCTORADO EN INGENIERIA CIVIL

ciencia e ingeniería de estructuras

Ultrasonic NDT and SHM



Dr. Paul FROMME

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Día : Martes 25 de febrero 2014

Hora : 11:30h

Lugar : Seminario I, E.T.S. Ing. Caminos, C. y P.
Campus Fuentenueva

Universidad de Granada

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ABSTRACT

Many technical structures contain large components, which can suffer from damage, e.g. severe corrosion and the development of fatigue cracks, during their service life. Permanent monitoring of such structures can be achieved using guided ultrasonic waves, which can propagate over large distances and allow for the efficient nondestructive testing of such structures with limited access. Different aspects of the ultrasonic nondestructive testing of structures will be explored during this presentation.

The presentation will address recent areas of investigation, namely:

- Low frequency guided ultrasonic waves in plates (Lamb waves) for large area Structural Health Monitoring (SHM).
- Fatigue crack detection for aerospace applications.
- High frequency guided waves for multi-layered structures.
- Guided ultrasonic waves in composite plates.

SHORT BIO

Paul Fromme's research interests lie in the application of ultrasonic waves for nondestructive testing and structural integrity monitoring.

The main focus of his research has been the experimental, numerical, and analytical study of the propagation and scattering characteristics of guided waves in plates. In collaboration with an aerospace company, he studied the interaction of guided waves with fatigue cracks at fastener holes in aircraft fuselages.

In collaboration with other UK universities, he investigated the possibility of applying guided waves, array, and distributed sensors technology for the permanent structural integrity monitoring of oil and rail industry structures. Paul Fromme is currently working on further applications of ultrasound, including bio-medical testing and signal processing.

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