University of Nottingham - PhD Scholarship in Engineering Science

The impact of parametric uncertainties on the GPS based structural health monitoring

Supervisors:
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The University of Nottingham is a world leader in structural R&D. With a research income which exceeds £120M per Year, the Engineering Research Power of the University currently ranks 4th in the UK. The Faculty of Engineering is ranked in the top 5 out of 85 engineering departments in the UK in the last Research Assessment Exercise, with most of its research output classified as world leading or internationally excellent in quality. It provides state-of-the art experimental and computational facilities and attracts leading scholars from around the world, many of whom are leaders in their fields.

Project description:

Fatigue induced failures of civil structures can be life threatening for users and financially catastrophic for the operator and the manufacturer. This is the main reason for which a large part of the structure's project cost is spent for the inspection of its behavior, commonly known as structural health monitoring.

The recent rapid development of GPS (i.e. sampling frequency up to 100Hz) broadens its potential in structural health monitoring. However, the impact of the uncertainties of i) the measurements, ii) the structural dynamic characteristics and iii) the periodically changing load conditions has to be investigated. The successful PhD candidate will work within the Civil Engineering Department as well as the School of Mathematical Sciences and will contribute towards the implementation of such uncertain parameters within the existing knowledge of the structural health monitoring.

The PhD programme contains a training element, including research work and traditional taught material. The exact nature of the training will be mutually agreed by the student and their supervisors. The graduate programmes at the School of Mathematical Sciences provide a variety of appropriate training courses.

The successful applicant would:

i) be in possession of (or be expecting to obtain) a 1st class degree (BSc or Msc) in Civil/Mechanical Engineering, Mathematics or a relative discipline and
ii) have excellent analytical and programming skills and a solid background in numerical modelling and/or structural dynamics.

The studentship provides an annual stipend of approximately £13,726 and full payment of Home/EU Tuition Fees and will cover up to four years of study, depending on the training needs of the candidate. The studentship is available immediately but could also be used for 2014/15 entry.

Informal enquiries should be addressed to Dr P. Psimoulis panagiotis.psimoulis@nottingham.ac.uk and/or Dr D. Chronopoulos dimitrios.chronopoulos@nottingham.ac.uk.
To apply, please access: https://my.nottingham.ac.uk/pgapps/welcome/.
This studentship is open until filled. Early application is strongly encouraged.