



Guest lecture:

Bridges in transportation infrastructure systems: From multi-hazard to management

Speaker: **Dr Cristoforo Demartino,**
College of Civil Engineering, Nanjing Tech University

Time: 5 Februar 2019 at 15:00-16:00

Place: Navitas, Inge Lehmanns Gade 10, Aarhus C,
Auditorium (00.117)



Infrastructure systems can be broadly defined to include buildings and other facilities, transportation infrastructure, telecommunication networks, the power grid and, environmental systems.

These systems are essential for modern society because they provide critical services needed for any human activity.

One of the key elements of transportation infrastructures are bridges that are a special class of structures designed to carry pathway or roadway over a depression or obstacle. Bridges are often exposed to multiple hazards during their service life. Among these hazards, earthquakes and hurricanes have been known to inflict severe damage to a portfolio of bridges across a region.

Moreover, a large amount of research has also demonstrated that other hazards causing light damage but leading to serviceability problems can produce large economic losses making lose the reliability perception to the users.

Thus, identification of major sources of risk to bridges in a region subjected to multiple hazards is vital for their management of pre- and post-event activities such as retrofit of deficient structures or selection of viable emergency response routes.

About the lecture

In this context, this seminar frames within the risk perspective the problem of bridges in infrastructure transportation systems starting from the analysis of the different hazards and showing the conceptual steps to quantify different indicators usable for management.

At this talk, Dr. Demartino will introduce his vision and work developed within his research. In particular, attention will be paid to different problems such as the cable vibrations under different climatic conditions, the human-induced vibrations of footbridges, the vehicular impact against bridge piers and the seismic assessment using non-contacting techniques such as UAVs.

After, the discussion will move to the network scale introducing the techniques that can be used in order to improve the sustainability, efficiency, maintainability, durability, and overall performance of these complex systems. The question then arises, the bridges of the future or the future of bridges?

Light refreshments will be served.

For more details and questions please contact
Christos T. Georgakis (cg@eng.au.dk).