



# Dipartimento di Strutture per l'Ingegneria e l'Architettura (DiSt)

Nell'ambito del **Corso di Dottorato in  
Ingegneria Strutturale, Geotecnica e Rischio Sismico**

**8 febbraio 2022, ore 16:00-18:00**

## **Dott. Konstantinos Bakalis**

**Seminario on-line**

# **Seismic risk assessment of industrial facilities**

Industrial facilities provide a direct link between extraction and exploitation of raw materials. The complex production process that takes place in industrial facilities, involves a variety of structural typologies, like steel or reinforced concrete buildings that support industrial equipment, chimneys, process towers, atmospheric tanks for the storage of liquid-form products, pressurized spherical or "bullet-like" tanks. Typically, these structures are interconnected through a dense network of steel piping. Safeguarding the integrity of those facilities against natural hazards is of paramount importance, because their failures can be the cause of industrial disasters, so-called Natural-Technological (NaTech) events, leading not only to direct monetary loss and business disruption, but possibly also to uncontrolled leakage, major fire incidents, casualties and injuries. This seminar aims to provide insights regarding the implementation of a performance-based earthquake engineering framework for the case of industrial facility components, focusing on liquid storage tanks and buildings. Beside the modelling techniques that can be employed to derive the distributions between structural response parameters and seismic intensity, the approach to extract fragility curves and risk estimates for such complex structures are presented.

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