CASE STUDY

DAMAGE DETECTION USING WAVE PROPAGATION ANALYSIS

DESCRIPTION:

Damage detection is one of the most important task in the field of Structural Health Monitoring (SHM). The SHM systems are recently being used for non-destructive testing for various types of structures. The goal of the case study is to investigate whether the response of the model at the detection side has been changed through a comparison between the model being intact and the model being damaged.

The case study will include simulating a concrete beam and a plate (slab), applying a dynamic wavelet on one side of each of the models, and detecting the response on the other side of the model. Each of these models should be considered in two cases: intact and damaged.

Further comparison includes implementing other models for the case of damaged beam considering different locations of the damage (crack) in each of the two models and different shape of the crack, e.g. vertical crack, inclined crack, a circular hole, etc.

REQUIREMENTS:

- First experience with FE software such as ABAQUS
- Basic knowledge of MATLAB.

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