Damage identification and prediction of structural response

A structural damage identification is one of critical issues related to a proper operation of engineering structures in numerous industrial branches. The developed methods for this purpose are focused on the effective identification of structural damage using the advancements in measurement techniques as well as algorithms used for processing the raw measurement data. These methods are strongly correlated with non-destructive testing techniques, being one of the key aspects of the currently implemented design and maintenance philosophies.

A further step beyond the identification of structural damage is a prediction of its influence on a structural response, which makes it possible to identify locations that are critical from the point of view of a structural integrity and estimate the structural residual life. Such approaches cover not only the proper identification of the damage, but also the evaluation of their influence on a structural response based on the concepts of fracture mechanics and failure of structures and often use numerical simulations or reverse engineering concepts.

The symposium is intended to be a platform for a wide discussion on recent problems related to the methods of non-destructive testing and prediction of a structural response, including the new developments in measurement techniques and methods of the enhancement of damage detectability, the evaluation of a response and durability of structures containing damage, estimation of a structural residual life, damage mechanics, fatigue and failure of materials and structures.

Accepted conference papers within this symposium will be published in the Elsevier's Procedia Structural Integrity journal indexed in the major databases, including Scopus and Web of Science.

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