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Experiences of Structural Health Monitoring in Operational Conditions

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The aim of structural health monitoring for civil structures is not only detection of sudden damages due to extreme events but also monitoring progressive damages or structural performance under operational conditions. In particular, SHM can represent a valuable tool for detection of slowly evolving in time degradation phenomena, which can affect structural performance but whose effects can be hidden for long.

Continuous monitoring of relevant structural and environmental parameters gives the opportunity to improve the level of knowledge about behaviour and performance of civil constructions. By adopting automated data processing procedures, a database of relevant parameters can be archived over time and used for health assessment purposes. It can give a contribution to the detailed knowledge of the structural behaviour in operational conditions and about the effects of environmental factors on the structural response. In the present paper, experiences gained at the Structural and Geotechnical Dynamics Lab "StreGa" in the field of Structural Health Monitoring of civil constructions in operational conditions will be reviewed. Implemented SHM systems will be described with specific reference to their most relevant aspects, adopted data processing procedures and monitoring results.

Ключевые слова:

Содержание.

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