
Over the last decade, Unmanned Aerial Vehicles (UAVs) have been used for monitoring construction and operation of civil infrastructure, as well as industrial facilities and power plants. Their operational simplicity along with time-and-cost-related benefits have already rendered them attractive for structural surveying. Nevertheless, the field of UAV research currently lacks a targeted employment of UAVs for Structural Integrity Management (SIM) and Structural Health Monitoring (SHM). This paper provides an overview about actual developments of UAV technologies, breakthroughs in sensor technologies, SHM and Value of Information analysis, the latter being oriented to facilitate an efficiency assessment of precision and cost dependent information. Relevant literature, as well as research and industrial projects, integrating UAVs and SHM are described and assessed, while monitoring strategies, advanced technologies and related algorithms are discussed with a view to achieving increased Value of UAV-based SHM Information.

General information
Publication status: Published
Organisations: Design and Processes, Department of Civil Engineering, Structures and Safety, Aalborg University, SNC-Lavalin Group
Contributors: Kapoor, M., Katsanos, E., Thöns, S., Nalpantidis, L., Winkler, J.
Pages: 2161-2168
Publication date: 2019

Host publication information
Title of host publication: Life-Cycle Analysis and Assessment in Civil Engineering: Towards an Integrated Vision: Proceedings of the Sixth International Symposium on Life-Cycle Civil Engineering (IALCCE 2018)
Place of publication: London
Publisher: CRC Press
Editors: Caspeele, R., Taerwe, L., Frangopol, D. M.
ISBN (Print): 978-1-138-62633-1
ISBN (Electronic): 978-1-315-22891-4
(Life Cycle Civil Engineering).
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review