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ABSTRACTS

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Analysis of the dynamic behaviour of a radar tower

Rui Barros, Hugo Guimarães, Manuel Braz Cesar

Abstract: The present work addresses the study of the dynamic behavior of a metallic steel tower 45 meters high, supporting a radar antenna. Some methodologies are followed for the characterization of the major external excitation on the radar tower, namely the environmental actions due to wind and the seismic action as well. A complementary study associated with the dynamic effects due to the antenna rotation is also emphasized, since it is related with crucial malfunctioning of the mounted equipment. Finally it is proposed a solution for the control of vibrations, through the design and installation of tuned liquid dampers at the instrumental platform near the top of the radar tower; a few advantages associated with such improved implementation are discussed.

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