



Assessment of the current state of Alazhar Mosque, Cairo, Egypt: Continuous Monitoring of Minarets Inclination

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Abstract

Al-Azhar considered one of the oldest mosques and the first theological college founded in Cairo. The main building material used in the mosque construction is dolomitic limestone and lime mortar. In many cases the wind affects the monumental structures and the direct action is related to the air flow by the rise of significant forces acting upon the surface of the structure.

The inclination of the Mosque five minarets was monitored continuously in three dimensions X, Y & Z. Some oscillation sensors are installed on the top of the solid part of each minaret while the other sensors have been installed inside the minaret bulb to study the difference in dynamic behavior.

From the recording data, it is obviously readable that all minarets are continuously oscillating in the three dimensions and such data is helpful for studying the dynamic behaviors of minarets which directly related to local wind forces.