



Response of Historical Buildings on Induced Signal with Exactly Defined Frequency Spectrum

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Buildings are important historical signs of all periods. Every age had its architectural aspect. Nowadays we have to change many old town centres in sense of modern style of living but not destroying any national memories. Our team had taken part at many engineering processes using vibration or impact methods during building new facilities nearby historically important houses and palaces. We would like to present techniques for computing transfer function between the sites – place of the application of building technology, mainly using a heavy industry – and near building. For building subterranean places are used special vibrators for with frequencies several tens Herz (eg. 30 Hz). This sinusoidal signal can be used for finding a transfer function. Such information offers other possibilities – especially we can assume critical, resonant, frequency of building(s). This method suppose of using several (at least two) sensors with common time basis. One sensor is place next to the source of vibration(s) and the other are at the basement(s) of examined building. Application of such approach can be also used in civil engineering for measuring carrying-capacity concrete piles. Detail description of both mentioned processes and computations will be presented.