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Combined No Dig techniques for the characterization of historical buildings' structural elements in Abruzzo

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Non destructive investigation techniques, No Dig Techniques, have been applied in engineering field since over fifty years, and their employment innovations increase proportionally to the technological development.
Actually, for existing buildings, is possible to employ several non destructive investigation techniques, according to current national and local regulations.
The application of an indirect survey campaign, enable to extend the result obtained by a confined e/o local destructive investigation method to the whole studied object. It offers a more complete structure knowledge, in terms of physics, chemistry and mechanical characterization, in despite of using less invasive investigation methods.
In this paper the attention is pointed on structures characterization, belonging to historic and architectonic Italian heritage, using minimal impact investigation methods.
The proposed method consists of the combined employing of Georadar technique, using high frequencies antennas unit, and sonic method, setting an impulsive mass centred on low frequencies. The result of this combined method, employed in the Abruzzi Region post seismic context (6th april 2009 Earthquake), are exposed treating two case-studies of masonry pillars characterization in the "De Amicis" school courtyard (L'Aquila old town centre), and in the naves of Valvense Basilica di San Pelino (Corfinio).