

EVALUATION AND INCIDENCE OF THE SITE-EFFECTS ON THE LOCAL SEISMIC HAZARD ASSESSMENT FOR THE CHACAO CHANNEL BRIDGE, CHILE

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The upcoming Chacao Channel Bridge that will be located at X region in southern Chile, is undoubtedly one of the most important civil engineering projects in Chile and the world. The location of this mega structure is framed and confined by several hazard sources, from which the seismic hazard, uniform and local, is one of the most important to consider.

One of the basic hazard variables is the evaluation of the site-effects, due to dynamic amplification of soil or of topographic kind. Those effects can increase the seismic demand on specific areas, and mainly for long span bridges, in which this aspect is considered as part of the spatial variability effects.

This paper describes the main results related with the evaluation of site-effects in the area of the upcoming Chacao Channel Bridge. The geophysical surveys performed applying refraction/reflection techniques as well as ambient microvibration analysis are explained and detailed. Predominant periods of soils, ground stiffness and dynamic/topographic amplification are exposed.

Results for the north and south access are presented as the basis for the evaluation of the local seismic demand of the structural system.



Figure 1. Spatial Distribution of the Seismic Surveys Performed and Vs30 Values, North Side



Figure 2. Spatial Distribution of the Seismic Surveys Performed and Vs30 Values, South Side

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