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Comparing semiquantitative logic trees for archeoseismology and paleoseismology: the Baelo Claudia (southern Spain) case study

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The Bolonia Bay close to the Strait of Gibraltar hosts the Roman ruins of Baelo Claudia. This ancient town has suffered two earthquakes in the 1st Century AD and in the 3rd Century AD. Earthquake related damages can be found everywhere inside the ruins, the adjacent mountain ranges show features of neotectonic activity. Extensive paleoseismological and archaeoseismological investigations have been taken out at the archeological site and its environs during the last years. The newest 14C dating results from damaged infrastructure are presented here. All paleoseismological and archeoseismological observations have been rated using the two logic trees introduced by Atakan et al. 2000 (Paleoseismology) and Sintubin & Stewart 2008 (Archeoseismology) for this poster. Our results show that a mere paleoseismological classification of the geological features leads to a paleoseismic quality factor (PQF) of 0.056, which is low compared to the one achieved by Atakan et al. 2000. Taking into account the additional information from archeoseismological work (archeoseismological quality factor AQF is 0.95), it becomes clear that the Baelo Claudia study site provides the possibility for detailed earthquake investigations. Therefore, it has a high potential for a reliable seismic hazard analyses.

References:

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