



Possible extreme UK earthquake events hidden in the historical record

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Evidence from seismic and bathymetric surveys along the passive margin of NW Europe indicates that there are a number of features suggestive of large earthquakes having occurred in geologically recent times, although the exact timing of these events is difficult to establish. It might be thought that although such large earthquakes may have occurred, for example, in immediate post-glacial times in response to rapid isostatic readjustment, no earthquake in the UK area in historical times has exceeded a value of around 5.7 Mw. However, in past interpretations of regional seismicity, the possibility that some known historical earthquakes were in fact passive margin events has not really been canvassed. A large, distant, offshore earthquake is likely to be felt only at moderate strength over well-populated areas without any observable damage concentration. In a period when documentation of earthquakes is always sparse, such an occurrence is likely to lead to vague reporting that will not be easily interpretable. Looking at the historical record with this in mind, it is possible to identify some earthquakes that are at least compatible with an offshore interpretation. However, in no case is such an interpretation the only one viable. Also, some cases that appear to be potentially passive margin events can in fact be discounted. While there is no unequivocal evidence for large earthquakes having occurred on the NW European passive margin in historical times, neither can the possibility be rejected. Thus the regional maximum magnitude may be larger than has hitherto been assumed.