

## **New estimates of seismicity rates in ireland**

Pierre Arroucau, Sergei Lebedev, James Grannell, Martin Mölhoff, Chris Bean, Clare Horan, and Tom Blake  
Dublin Institute for Advanced Studies, Dublin, Ireland (parroucau@cp.dias.ie)

According to existing catalogs, the seismicity in Ireland is characterized by low magnitude, infrequent earthquakes. Such low seismicity levels are expected, considering the location of Ireland several hundred kilometers away from the closest plate boundaries. Yet, it still appears surprisingly low compared to neighboring domains, including Great Britain and more generally the rest of the west European margin. One explanation might be that the events reported in those catalogs do not reflect the actual seismic activity of Ireland due to the small number of permanent seismological stations on the Irish territory, so a large number of the earthquakes occurring in that region would have been missed due to their low magnitude. Here, we combine the waveform data recorded at permanent (INSN, BGS) stations with that from dense temporary array deployments in the past 5 years by the Dublin Institute for Advanced Studies (DIAS) and the University College Dublin (UCD). In addition to new arrival time data and new locations for already known, catalog events, our analysis reveals newly detected earthquakes in Ireland. It seems however to confirm that the low level of seismicity of the region suggested by existing catalogs is real, and not due to an instrumental bias.