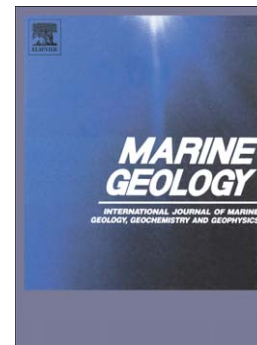


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## Sedimentary impacts of recent moderate earthquakes from the shelves to the basin floor in the western Gulf of Corinth

Arnaud Beckers<sup>1,2</sup>, Christian Beck<sup>2</sup>, Aurelia Hubert-Ferrari<sup>1</sup>, Jean-Louis Reyss<sup>3</sup>, Clément Mortier<sup>1</sup>, Paola Albini<sup>4</sup>, Andrea Rovida<sup>4</sup>, Anne-Lise Develle<sup>5</sup>, Efthymios Tripsanas<sup>6</sup>, Dimitris Sakellariou<sup>7</sup>, Christian Crouzet<sup>2</sup> and Oona Scotti<sup>8</sup>

<sup>1</sup> Dept of Geography, University of Liège, allée du 6 août 2, 4000 Liège, Belgium. Email : abeckers@ulg.ac.be.

<sup>2</sup> ISTERre, CNRS UMR 5275, University of Savoie, F-73376 Le Bourget du Lac, France.

<sup>3</sup> LSCE, CNRS UMR 8212, avenue de la Terrasse, 91198, F-91191 Gif-sur-Yvette, France

<sup>4</sup> Istituto Nazionale di Geofisica e Vulcanologia, Via E. Bassini, 15, 20133 Milano, Italy

<sup>5</sup> EDYTEM, University of Savoie/CNRS, Le Bourget du Lac, France

<sup>6</sup> Shell U.K. Limited, London, United Kingdom

<sup>7</sup> Institute of Oceanography, Hellenic Center for Marine Research, GR-19013 Anavyssos, Greece

<sup>8</sup> Institut de Radioprotection et de Sécurité Nucléaire (IRSN), Fontenay-aux-Roses, France

### Abstract

In seismically active areas, long term records of large earthquakes are indispensable to constrain recurrence patterns of large earthquakes. In the western Corinth Rift, one of the most active areas in Europe in terms of seismicity, data about ancient earthquakes are still insufficient, despite historical records covering the last two millenia and several studies in onshore paleoseimology. In this paper, we test the use of offshore sediments from the Gulf of Corinth to identify sediment failures and tsunamis that have been triggered by historical earthquakes. Two shelves (40-100 m deep), one sub-basin (180 m) and the basin floor (330 m) have been sampled by short gravity cores. The cores were analysed in order to identify and characterize event deposits. The age control has been provided by <sup>137</sup>Cs and <sup>210</sup>Pb activity measurements showing that the cores represent 2 to 4 centuries of sedimentation. In each site, sandy event deposits are interbedded in the muddy, hemipelagic sedimentation. The age of event deposits has been compared to the record of historical earthquakes using new and published macroseismic data. This comparison shows temporal coincidence of some event deposits and documented earthquakes with a macroseismic intensity  $\geq$  VII in the area, e.g. in A.D. 1861, 1888 and 1909. In nearshore, shallow-water settings, the record of event deposits does not exactly fit with the historical record of large

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