



## **The 2016 Central Italy Earthquake – A historic comparison**

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In 2016, a sequence of three major seismic events hit Central Italy, the first of those, the so-called Amatrice earthquake killed almost 300 people and left several towns in ruins. The event was followed by a sequence of aftershocks which peaked with 2 sequential ruptures to the North-West. The 2016 sequence was located spatially in between the 1997 Umbria Marche sequence and the 2009 L'Aquila earthquake. Even after the first event in 2016, a seismic gap to the North indicated a potential continuation of the event sequence, which proved true only 2 months later.

The spatial and temporal distribution of the sequence is compared with the events of 1997 and 2009. Here, the spatial pattern reveals parts of the local fault structure, showing how individual segments of the Central Italian fault system rupture piece-by-piece. The seismological characteristics between the 2016, 2009 and 1997 sequences are resolved and compared in detail. Intensity prediction relationships for all these events are computed and compared based on the INGV intensity surveys.

After this sequence, the question of future events arises and considering the general convergence of the Central Italian fault system, the slip deficit has been derived indicating potential locations for future earthquakes.