north- dissect the western part of Thrace Basin into three sub-basins: the Alexandroupolis SB in the south, the Orestias SB in the middle and the Petrota SB in the north.

The Alexandroupolis SB consists of two stratigraphic sequences separated by an angular unconformity. The lower sequence comprises the Kirki Formation, made of sandstones, shales and conglomerates of reddish colour, overlain by a 30 m thick sandstone member and by the Chorafaki Formation made of alternations of sandstones and pelites. The age has been determined as Middle Eocene (nannofossil biozone NP17, 39.8-36.8 Ma). The upper sequence comprises the Avas Formation, made of neritic limestones followed by the Pylaea Formation, made of marls, sandstones and some limestone interbeds. The age has been determined as Late Eocene-Early Oligocene (NP19/20-NP23, 36.2-30.0 Ma). At the area around Feres the Pylaea Formation contains thick volcanic rocks and pyroclastics.

The Orestias SB is featured only by the upper sequence, comprising the Metaxades Formation which is equivalent to the Avas Formation of Alexandroupolis SB and the Pythion Formation, which is equivalent to the Pylaea Formation of Alexandroupolis SB. A characteristic stratigraphic member is the *Congeria*-bearing limestone of Early Oligocene age. Volcanic rocks are practically absent from Orestias SB.

The Petrota SB has a basal clastic formation of sandstones and conglomerates of Late Eocene age, overlain by marls of Oligocene age.

The pre-Tertiary basement is different in the three sub-basins of western Thrace. The low-grade metamorphic Makri unit (part of the Circum Rhodope Unit) is observed below the western margin of Alexandroupolis SB, whereas the Melia not metamorphosed diabases and flysch are observed below the central part of the sub-basin. On the contrary, medium-high grade metamorphic rocks are observed below the southern margin of Orestias SB and also below the western margin of Petrota SB.

The above tectonostratigraphy can be correlated to that of the southern part of Eastern Thrace in Turkey around Tekirdag- Keşan - Kallipolis. Thus, Kirki Fm is equivalent to Fiçitepe Formation, Chorafaki Formation is equivalent to Keşan Formation, Avas Formation is equivalent to Soğucak Fm, Pylaea Formation is equivalent to Ceylan and Mezardere Formations. The *Congeria*-bearing sediments are indicating the northern margin of the Thrace basin both in the western part (e.g. Didimoticho, Pythion Fm) and the eastern part (e.g. Pinarhisar).

Fault geometry, surface ruptures, damage pattern and deformation field of the 2009 L'Aquila earthquake in Italy. Findings and implications

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The 6th of April 2009 Mw=6.3 earthquake in L'Aquila, central Italy, provides a broad range of useful outcomes and points for consideration in relation to all disciplines involved in seismic hazard assessment. Despite its moderate magnitude, the L'Aquila event resulted in the highest earthquake death toll in the EU since the 1980 Irpinia (Italy) quake. This event provides an important case-study, most notably because moderate magnitude earthquakes in areas of high population density, such as this, present a high risk in extensional settings due both to their high rate of occurrence and proximity to human habitation, forming a typical case study scenario. This event ruptured a small fault segment of the fault system and not one of the major postglacial fault scarps that outcrop in the area. This explains the minor primary surface ruptures that have been reported so that the 2009 L'Aquila event can be characterized as belonging to the lower end member concerning the capacity of the existing seismic sources of the area. These faults have not been activated during the 2009 event, but have the capacity to generate significantly stronger events. The deformation pattern of the 6th and 7th of April 2009 Mw=6.3 and Mw=5.6 earthquakes in L'Aquila is revealed by DInSAR analysis and compared with earthquake environmental effects. The DInSAR predicted fault surface ruptures coincide with localities where surface ruptures have been observed in the field, confirming that the ruptures observed near Paganica village are indeed primary. These ruptures are almost one order of magnitude lower than the ruptures that have been produced by other major surrounding faults from historical earthquakes.DInSAR analysis shows that 66% (or 305 km^2) of the area deformed has been subsided whereas the remaining 34% (or 155 km^2) has been uplifted. A footwall uplift versus hangingwall subsidence ratio of about 1/3 is extracted from the mainshock. The maximum subsidence (25cm) was recorded about 4.5 km away from the primary surface ruptures and about 9 km away from the epicentre. In the immediate hangingwall, subsidence did not exceeded 15 cm, showing that the maximum subsidence is not recorded near the ruptured fault trace, but closer to the hangingwall centre. The deformation pattern is asymmetrical expanding significantly towards the southeast. A part of this asymmetry can be attributed to contribution of the 7th of April event in the deformation field.

Fault geometry influenced significantly the damage pattern. Villages located on the hangingwall experienced higher intensity values, compared to villages located on the footwall. This is also verified by the DInSAR which shows that the hangingwall area was subjected to higher deformation values. On average, subsidence values were two and a half times up to three times larger than the uplift values, leading to more violent shaking.The large number and extensive spatial distribution of secondary surface ruptures that occurred not only within the recent sediments of the Aterno basin, but also on pre-existing fault planes was another characteristic of this earthquake. These ruptures are usually disregarded in seismic hazard assessment planning and design studies, but can produce significant damage. Finally, basin effects and the bedrock geology played once more a decisive role to the damage pattern, even at short distances. It is interesting to note that villages that were only 1.5km apart, but founded on different bedrock geology recorded up to three intensity values difference.

Environmental assessment of potentially toxic trace elements in sediments of Filippos B port, northern Aegean Sea – a comparison with other national and international coastal regions

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Nine sediment samples from Filippos B port, Kavala, northern Greece, were collected, sieved under 200 μm and analyzed for their content in 14 potentially toxic trace elements (Ag, As, Ba, Cd, Co, Cr, Cu, Hg, Mn, Ni, Pb, U, V and Zn). The results indicate that the majority of the elements are found in concentrations similar to other national and international coastal regions. However, Cd seems to be highly enriched in the sediments of the present study. The samples with the highest concentrations of Cd, as well as for the rest of the elements, are found in front of the local, anthropogenic activities. According to their distribution, the elements of the present study can be divided into two groups; group A includes the elements Ag, As, Cd, Hg, Pb and U, group B the elements Ba, Co, Cr, Cu, Mn, Ni, V and Zn. The former are influenced mainly by the activities of a fertiliser plant, while the latter by all the local anthropogenic activities.