high uplift of Eastern Carpathians which occurred in the Late Miocene-Pliocene (about 4 km uplift and continues to the present day) and higher Upper Badenian-Pliocene sedimentation rates (recorded in the Eastern and Central parts of basin) combined with the Pliocene-Quaternary uplift of the Apuseni Mountains and the presence of the some strike-slip faults developed a pushing pressure of the Salt Formation toward the center and southwestern parts (salt sliding) of basin with the initiation of these reverse faults. Coevally with the Pliocene uplift of the South Carpathians (considerate as rigid fix block for the Miocene-Pliocene sediments of the Transylvanian Basin - after this uplift) were developed normal faults in the southern part of this basin, parallel to the orogen and evolution of the Cenade-Ruşi-Veseud reverse system faults don't stop, it is still activate.

Comparison of characteristic and Gutenberg–Richter models for time–dependent M≥6.0 earthquake hazard in the Corinth gulf, Greece

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Earthquake forecasts have always been a difficult task because they can be affected by uncertainty in terms of the most appropriate model and the involved parameter values. The application of two quite different models to the same seismogenic area was explored. The first belongs to the category of the renewal models, based on the characteristic earthquake hypothesis, the necessary ingredients of which being historical or paleoseismic recurrence times, and a fixed geometry for the faults. The hazard rate so obtained is then modified by the inclusion of a permanent effect due to the Coulomb static stress change caused by failure of neighbouring faults that occurred since the latest characteristic earthquake on the concerned fault. The second model consists of a very simple earthquake simulator, which can be described by parameters taken from two data input classes, fault slip rates and adoption of a Gutenberg–Richter magnitude–frequency distribution. This information is commonly available even if historical and paleoseismic recurrence data are lacking. The intention is to develop and assess a simulator that has a very limited parameter set, which has the benefit of reducing and quantifying uncertainty. We apply both methods along the Corinth gulf extension zone, a place that is rich with observations of strong–earthquake recurrence behaviour, to assess their relative forecast applicability. We find that use of slip rate as a primary constraint allows the simulator to replicate the pattern of observed segmented rupture rates along the Corinth seismogenic zones. As they evolve through time, our rupture simulations preferentially fill slip gaps, enabling estimates of time–dependent segment recurrence. We conclude that very simple earthquake rupture simulations based on empirical data and fundamental earthquake laws can be useful forecast tools.

Along arc geochemical variations in hydrothermal activity in the South Aegean Volcanic Arc: ancient and modern

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Submarine hydrothermal mineralization occurs in at least five locations in the South Aegean (Hellenic) Volcanic Arc; from west to east of Methana, Milos, Santorini, Kos and Nisseros/Yali. Manganese and iron enrichments in seawater and marine sediments are sensitive indicators of the presence of this hydrothermal activity and are sometimes the only