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## Numerical modelling of the Montenegro tsunami of 15 April 1979

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On April 15, 1979, the coastal region of Montenegro was shaken by a devastating earthquake ( $M = 6.8$ , Modified Mercalli Intensity = IX-X). Towns and villages were severely damaged, numerous cultural heritage sites were destroyed and around 150 people were killed. The hypocenter was in the sea near the coast between Bar and Ulcinj at a depth of 13 km. The earthquake triggered a tsunami, which was registered by several tide gauges. The strongest waves with an initial height of 45 cm were registered in nearby Bar, where oscillations lasted for more than 24 hours. Tsunami waves of up to 10 cm in height were also recorded on the opposite Adriatic coast, at the Bari (Italy) tide gauge. According to newspaper reports, the tsunami had a strong impact along the Montenegrin coast, with waves reaching a height of up to 3 metres and one person drowning. The numerical model COMCOT (Cornell Multi-grid Coupled Tsunami model) was used to simulate the tsunami. Since various parameters for the earthquake source fault parameters are given in the literature, with varying values for the location of the epicentre, the depth, the earthquake magnitude, and the properties of the nodal plane, we carried out a series of simulations by considering a reasonable range for each parameter. The simulations differed in the parameters of the earthquake source - as given in the literature, as well as in the length and width of the fault plane. The simulation that best reproduced the waves recorded at the tide gauges was selected as representative and was further analysed to determine maximum heights, currents, inundation areas and tsunami propagation in the Adriatic Sea.