

Marine terraces in north-eastern Calabria (southern Italy): the geological record of a continuous uplift from Middle Pleistocene to the present

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A flight of at least seven marine terraces with elevation up to over 400 meters has been recognized by aerial photo interpretation and field survey along a ~200 kilometer-long stretch of Ionian coastline in northern Calabria.

The good overall state of preservation of inner edges and wavecut platforms allowed their geomorphic correlation over long distances, particularly for the lower terraces.

Merging ad hoc aminostratigraphy datings with datings coming from literature permitted to correlate each terrace in the sequence with a highstand of the paleosea-level, thus reconstructing the evolution of this section of the Ionian coast. Typical average uplift rates of ~0.7 millimeters per year affect the area since Middle Pleistocene, with a presumable time of inception of 0.6-0.7 million years ago; the uplift is still active during the Holocene, possibly at a similar rate.

The flight of terraces shows a long wavelength increase of the rate of uplift moving southward along the coast, due to large-scale geodynamic processes. At a more local scale, sharp elevation changes and backtilting of the terraces are related to the activity of individual faults.

The present setting of the terraces is therefore the result of the interaction between interglacial highstands, regional uplift, and local fault-related deformation.