



Late Quaternary extension of the southern Adriatic foreland (Italy)

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The Adriatic foreland of the Apennines comes ashore only in Apulia (easternmost Italy). The Southern Apulia, our study area, lacks any structural analysis devoted to define its recent-to-active tectonics. Throughout the Quaternary, this region was affected by mild brittle deformation with rare faults, characterised by small displacement, and widespread extension joints, frequently organised in sets. Therefore, we conducted a quantitative and systematic analysis of the joint sets affecting Quaternary deposits, by applying an inversion technique *ad hoc* to infer the orientation and ratio of the principal stress axes (R). Within a general extensional regime, we recognised three deformational events of regional significance. The oldest event, constrained to the early and middle part of the Middle Pleistocene, is characterized by variable direction of extension and R between 0.64-0.99. The penultimate event, dated late Middle Pleistocene, is characterized by an almost uniaxial tension, with a horizontal σ_3 striking $\sim N43^\circ$; R is high, between 0.85-0.99. The most recent event is characterized by the lowermost R values, that never exceed 0.47 and are frequently < 0.30 , indicating a sort of horizontal 'radial' extension. This event is not older than the Late Pleistocene and possibly reflects the active stress field still pervading the entire study area.