



ÉCOLE NORMALE SUPÉRIEURE



Séminaire Général

Pr. Marco Anzedei

(Istituto Nazionale di Geofisica e Vulcanologia, Italie)

« Sea-level changes and vertical motion of the land in the Mediterranean: tectonic implications and projections for the future. »

The Mediterranean basin is an important area of the Earth for studying the interplay between geodynamic processes and landscape evolution affected by both tectonic, glacio-hydro-isostatic and eustatic factors. We focus on determining vertical deformations and relative sea-level change of the coastal zone utilizing geological, archaeological, historical and instrumental data, and modelling. For deformation determinations on recent decadal to centennial time scales seismic strain analysis based on about 6000 focal mechanisms, surface deformation analysis based on some 850 continuous GPS stations, and nearly 60 tide gauge records were used. Utilizing data from tectonically stable areas, reference surfaces were established to separate tectonic and climate (eustatic) signals throughout the basin for the last 20,000 years. Predominant Holocene subsidence (west coast of Italy, northern Adriatic sea, most of Greece and Turkey are areas at risk of flooding due to relative sea-level rise), uplift (local areas in south-western Italy and southern Greece) or stability (north-western and central western Mediterranean and Levant area) were determined. On the basis of the eustatic, tectonic and isostatic components to the sea level change, projections are provided for marine inundation scenarios due to sea-level rise across the Mediterranean and for the Italian coastal plains for the year 2100, that today are at elevations close to current sea level. Superimposed on the long trends, the coasts are also impacted by sudden extreme events such as recurring large storms and unpredictable tsunamis caused by the high seismicity of parts of the basins.

vendredi 11 avril 2014

11 h – Salle Conf. IV, 24 rue Lhomond

ENS, Département de Géosciences