

## THE CORSEIS EUROPEAN PROJECT IN THE RIFT OF CORINTH

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This paper presents an overall view of the CORSEIS ongoing European project, which is part of the Corinth Rift Laboratory (CRL) project. The aim of CORSEIS is to improve the observations tools and the modeling of crustal and fault mechanics, as well as methodologies for integrated seismic hazard assessment. The choice of the site in the rift of Corinth is based on the observation of a high historical seismicity (several magnitude 6 or more per century), a rapid long term tectonic deformation (slip of 1 cm/year), a high rifting velocity (1.5 cm/yr from GPS), and a high level of microseismicity (several magnitude 4 per year). The project is subdivided in eight interacting workpackages (WP). WP1 is the microseismicity study, mostly based on a shallow borehole velocimeter array (50-100 m) covering the target area of CRL, a 30x30 km<sup>2</sup> in the western part of the Corinth rift. A total of about 12 to 15 stations is planned, and 7 stations are presently working. About 10 events are well recorded within the array every day since spring 2000. The planned studies include: space-time variation and focal mechanism of microseismicity; use of multiplets for fault structure and velocity changes; crack-induced anisotropy; empirical Green's function for strong motion prediction. WP2 and WP3 concern accelerometry: a surface array of about 10 accelerometers is distributed on the whole area, on rock sites, and a dense downhole accelerometer array (depths between 0 and 200 m) will be concentrated in the Aigion harbour, within soft sediments, in order to study non-linear effects on strong motion. WP4 will deal with the engineering assessment of the whole project, in terms of seismic input and building code recommendations. WP5 concerns geodesy, with 5 continuous GPS sites on a cross shaped array covering the whole area, and a systematic analysis of InSAR data. It aims at modelling interseismic and coseismic strains. WP6 and WP7 are looking for geophysical and geochemical transients, with the future installation of sensitive strainmeters, tiltmeters, electric/electromagnetic, and geochemical stations; possible transients will be studied with respect to seismicity. Finally, WP8 is for the tectonics, including paleoseismology (trenching and coring in sediments) and morphotectonics, for revealing the activity of the Aigion and Helike faults, and obtaining long time series of rupture events. These studies will provide the general geophysical and tectonic image of the area, complementary to the more focussed frame of the 3F-Corinth and the DGLab-Corinth projects.