



11-15 December 2006, Monday - Friday

Moscone Center West, 800 Howard Street

San Francisco, CA, USA

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HR: 1340h  
AN: **T33B-0515 [Abstracts]**  
TI: **Recognizing Structures Associated With Extensional Detachment Faults Using GIS Techniques and Remotely Sensed Data From Greece.**  
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AB: A number of extensional detachment faults have been recognized in the broader Aegean area. Continuing work in onshore Central Greece reveals a broad system of such faults of Mio-Pliocene age that have been largely unrecognized by previous studies. As a reconnaissance tool, we are experimenting with techniques for interpreting satellite images and high resolution digital elevation data to identify topographic features that are commonly associated with low angle normal faults. Data analysis includes running specific imaging algorithms in a GIS environment, processing of digital satellite images, and extraction of slope and shaded relief maps. Processing of satellite images includes spectral analysis in addition to spatial enhancement, focusing on differentiating the basement rocks from the relatively younger sediments and identifying the recently formed basins, especially their boundaries. In this presentation we show results of this imaging process for some of the faults already identified through field work as extensional detachments in central and southern Greece. On the final GIS images, the Beotikos-Kifissos detachment fault can be observed as a smooth, gently dipping surface that bounds the southwestern margin of the Late Miocene to Pliocene Thiva basin. Likewise, the East Peloponnesus detachment fault is recognizable on the images, reaching from the southeastern end of the Peloponnesus northward to the Gulf of Corinth. Gently dipping surfaces that appear similar to these are visualized within a broad zone reaching eastward from the Gulf of Corinth to the Aegean Sea. These gently-dipping surfaces (and associated tectonic structures) form a morphologic pattern that is distinctly different from that of western Greece, suggesting that the region east of the Corinth Gulf has been pervasively deformed by a broad system of gently-dipping normal faults of probable Mio-Pliocene age. Field mapping planned for the future will be necessary to ground-truth the nature and age of these apparent low-angle surfaces.

DE: 8040 Remote sensing  
DE: 8107 Continental neotectonics (8002)  
DE: 8109 Continental tectonics: extensional (0905)  
SC: Tectonophysics [T]  
MN: 2006 Fall Meeting