

ALCUDIA-WA Structure of the Lithosphere of the area Castellano-Extremeña (South-Central Iberia Peninsula)

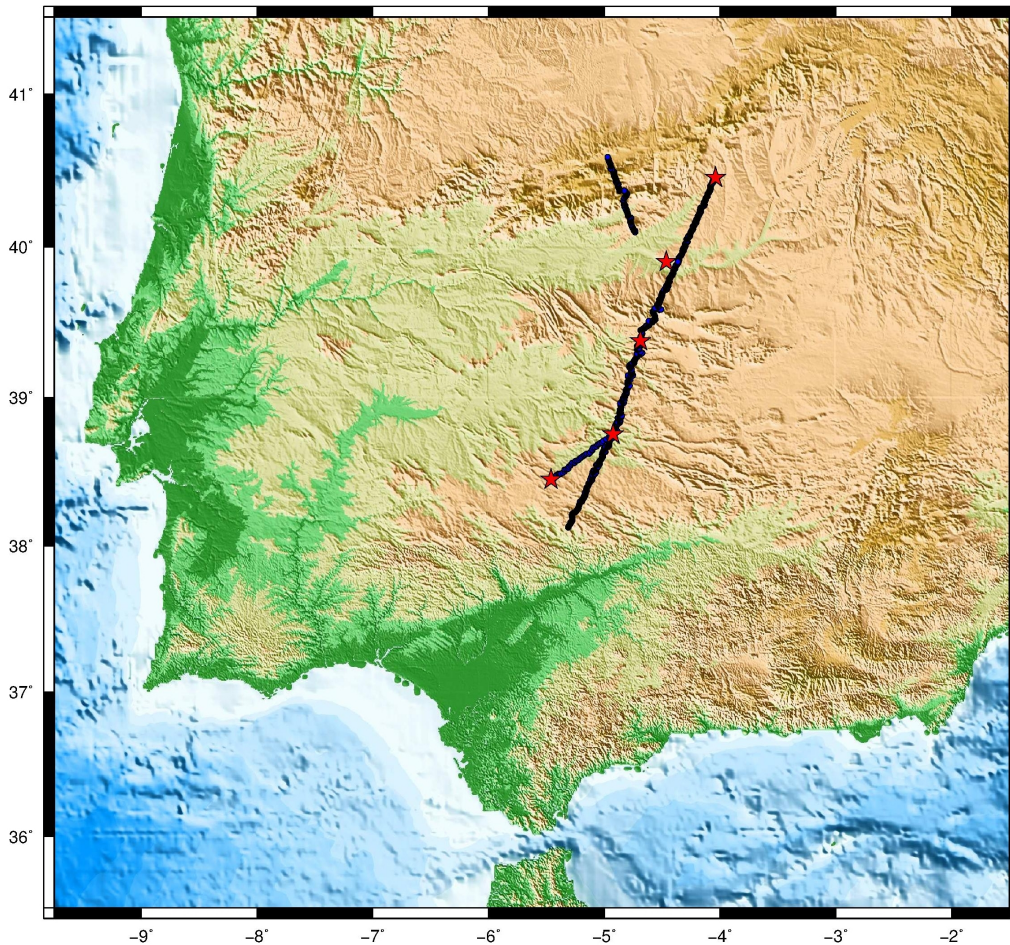
ACRONIM: ALCUDIA-WA

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Summary:

The lithosphere of the Central Iberian Zone (CIZ) differs from the lithosphere of the Southern Iberian Massif. They are limited by a suture zone. The relatively recently acquired deep seismic reflection profile IBERSEIS suggests that the activity of a Carboniferous mantle plume resulted in abundant intrusions of mafic magmas in the mid-to-lower crust which resulted in a singular crustal evolution. Thus the crust in this area is the result of anomalous lithospheric processes. The current knowledge in surface geology maps suggests that a basic magmatism continues further towards the north, indicating that the mantle plume may have affected an area up to the Tajo depression. The ALCUDIA-WA wide-angle seismic reflection project consists on a detailed, integrated geologic-geophysic transect of southern CIZ with the objective of constraining the lithospheric structure and propose models of tectonic evolution. The ALCUDIA-WA acquired a deep high resolution seismic transect and, detailed geological mapping, cinematic, petrologic and geochemical studies of the most relevant structures extending the IBERSEIS profile towards the northeast.

The experiment consisted in a main SW-NE line (over 800 instruments) and a supplementary transect that sampled the crust beneath the Central Iberian System (Fig. 1).



Sources:

The shot points consisted in 1000 Kg of Gel explosive in a single borehole movies of the shots are linked to the following:

<http://www.youtube.com/watch?v=dvnXlsrGb0o>

<http://www.youtube.com/watch?v=O36VlpMThNw>

<http://www.youtube.com/watch?v=aNUmDirJ6xs>