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On the Depth of the Asperity East of the Epicenter during the 2003 Boumerdes, Algeria, Earthquake.

F. SEMMANE

CRAAG, Department of Seismology, Algiers, Algeria (fethi.semmane@hotmail.com)

At least two unresolved questions in connection with the 2003 Boumerdes earthquake divide the community: One issue consists in the depth of the asperity east of the epicenter. The asperity to the west of the epicenter doesn't constitute a point of disagreement. The second issue is related to the precise location of the fault plan? Recent different studies showed three interesting results: 1 / an afterslip model following the earthquake, 2 / an InSAR interferogram and 3 / a distribution of earthquake damage. All these results consolidate the assumption that the high-slip region east of the epicenter is deep. Indeed, particularly in the eastern part of the epicenter the afterslip took place in the top of the fault plan, where there was smaller or no coseismic slip. The InSAR interferogram shows two areas of high-slip on both sides of the epicenter. Spaced fringes in the east of the epicenter corroborate the existence of a deep asperity. Finally, the damage distribution seems to be controlled by slip distribution on the fault plan. Indeed, a relatively less damage east of the epicenter also support the hypothesis of a deep asperity.