



Static and dynamic stress changes on the Thenia fault following the Boumerdes (M_w 6.9) earthquake.

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The Boumerdes earthquake occurred on a fault whose precise location offshore the Algerian coast was unknown. Semmane et al. (2005), suggested a fault model and a rupture history inferred from geodetic and strong motion data. They showed that the rupture stops its westward propagation close to the Thenia fault, a vertical structure almost perpendicular to the main fault. The Thenia fault is one of the major faults close to the city of Algiers liable to generate a large earthquake. We investigate how the Boumerdes earthquake transferred stress to nearby faults especially on the Thenia fault. Both static and dynamic Coulomb stress function time histories were calculated. Several aftershocks did occur in the Zemmouri region where the static stress has increased. We also show that the Boumerdes rupture has increased the static Coulomb stress in the northern part of the Thenia fault. However, on that specific major fault, early aftershocks (during the first week) have not been triggered by this static stress increase. We also show that some of the later aftershocks (during the first month) occurred on some stress shadow regions shown by the static Coulomb stress modelling.