



Implementation of geodetic networks in northern Algeria

K. L LAMMALI and the K. LAMMALI Team

Centre de Recherche en Astronomie, Astrophysique et Géophysique, BP63 Bouzaréah, Algiers 16340, ALGERIA

Northern Algeria, located along the Eurasian-African boundary plate is characterised by a moderate to strong seismic activity. During History, some violent earthquakes occurred mainly in the Atlas region, particularly in the Tellian area, leading sometimes to destruction of major cities of Algeria (Algiers, 1716; Oran, 1790; Blida, 1825...). In order to improve the knowledge of the deformation pattern of the Atlasic region, and more globally of the African-Eurasian plate boundary along the Algerian margin, the Research Center of Astronomy, Astrophysics and Geophysics (CRAAG) started since two year to implement two major projects:

- The REGAT (REseau Géodésique de l'Atlas), consists on a set of 20 continuous GPS stations deployed in the Atlas region, from the coastal area to the Sahara Platform. At this time, fourteen stations have been already installed. The first stations (Algiers-Bouzaréah, Tamanrasset...) of this basic network are producing data since 3 years. First time series are analysed. In 2009, it is projected to extend this network by another set of 50 stations.

- The second project consisting in deployment semi permanent GPS networks around four seismogenic basins and active fault areas. Many surveys have been already carried out in the following region.

- 1) Oran region, west Algeria
- 2) The Chelif basin (El Asnam region)
- 3) The Mitidja basin (from Tipaza to Dellys)
- 4) The Ain Smara (Constantine region) and Sigus (Guelma) faulting

In other hand, levelling measurements have been made around the El Asnam seismogenic fault responsible of the important earthquake of October 10 th, 1980 (M:7.3)