

Centre de Recherche en Astronomie Astrophysique et Géophysique

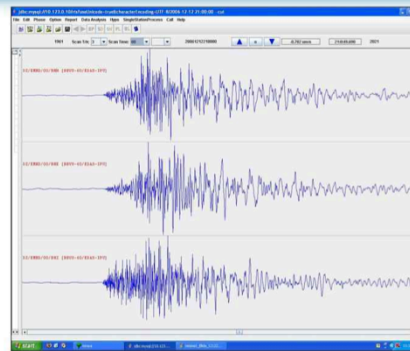
## CRAAG. Algeria



# The Algerian Digital Seismic Network

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CRAAG

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First Event recorded Blida 09.12.2006 M=2.8

**Kuwait City**  
From 14<sup>th</sup> to 18<sup>th</sup> January, 2013

## The major disaster to which Algeria is exposed is Earthquake





## ALGERIAN EARTHQUAKES



Alger 1716 I:X



El Asnam event 10.10.1980M:7.3



Orléansville event 1954 M:6.7



Boumerdes event 21.05.2003 M:6.8

# HISTORICAL EVENTS

**In the Roman period:** Some events now known as  
The Sitifis event of 419 AD (From Saint Augustin reports)  
The Ain Temouchent of 699 AD  
The Djemila event of 800 AD

**In the Medieval Period:** The events reported by the litterature  
Algiers event of January 1365 (X)

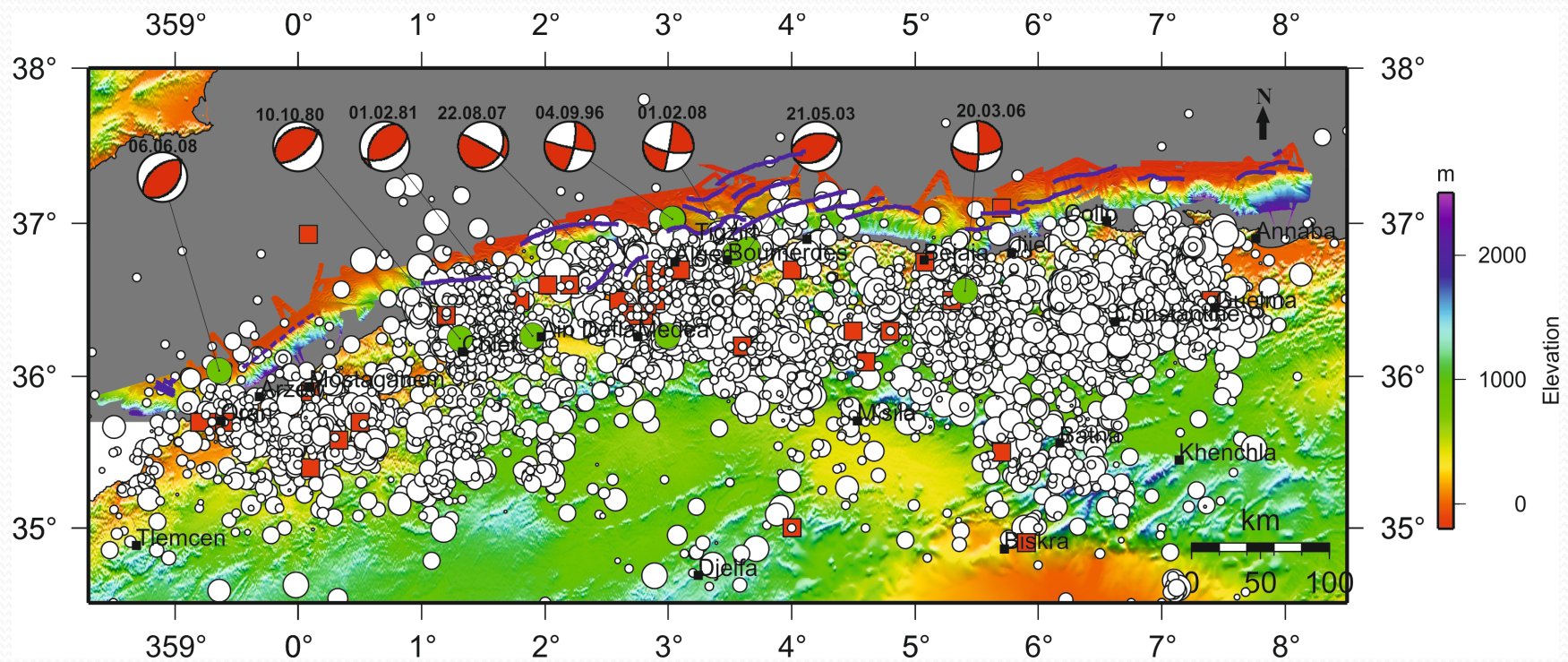
## **In the Turkish period**

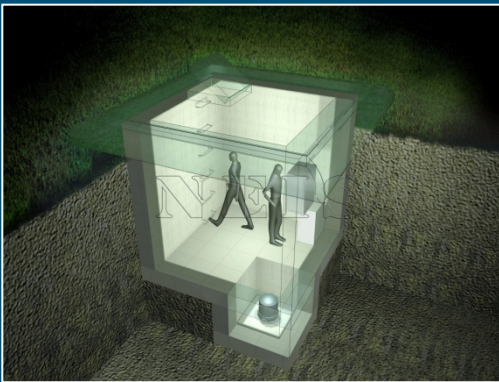
Algiers event of February 03th, 1716 (X)  
Oran event of December 1790 (X)  
Blida of March 1825 (X)

**In the French Period (1830- 1910)** Hundreds of events reported  
Djidjelli event of August 1856 (X)  
Gouraya event of 1891 (X)  
Orleansville event of September 1954 (M:6.7)

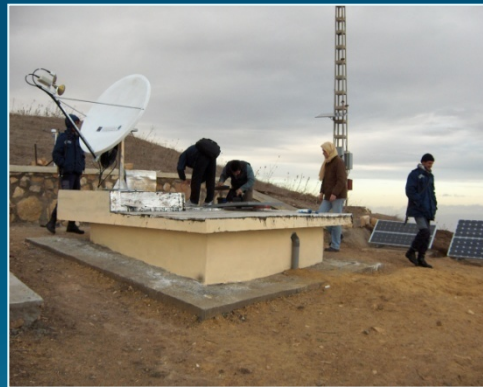


## Major Earthquakes 419-2012





Site model



BB Stations in operation



DC Power (Solar Panel)



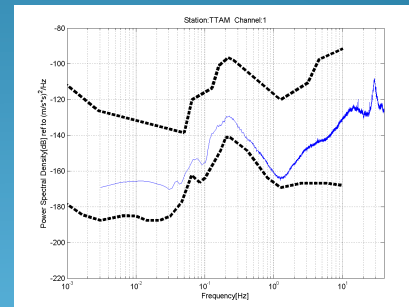
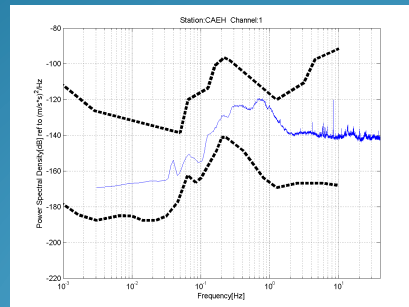
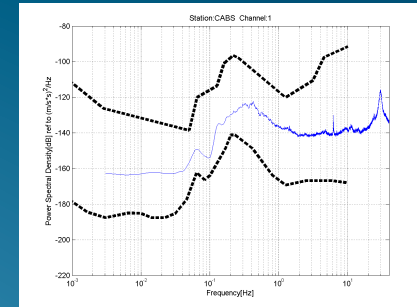
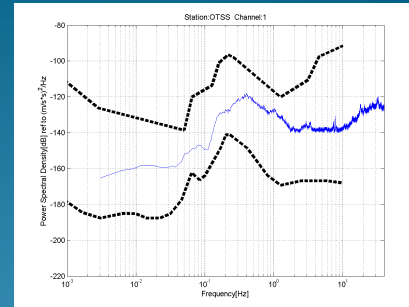
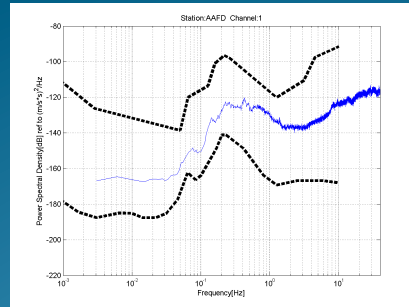
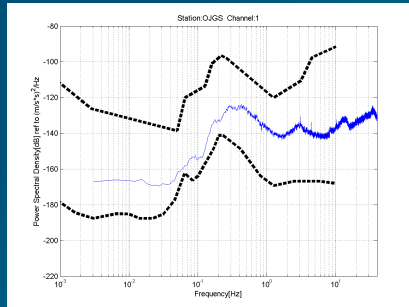
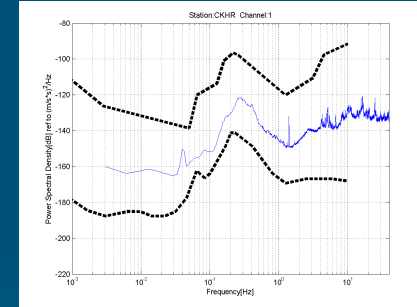
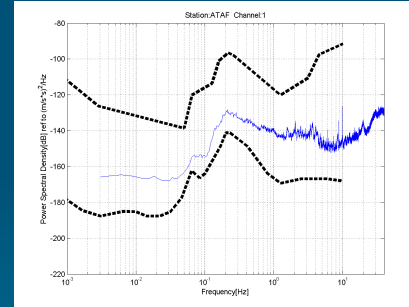
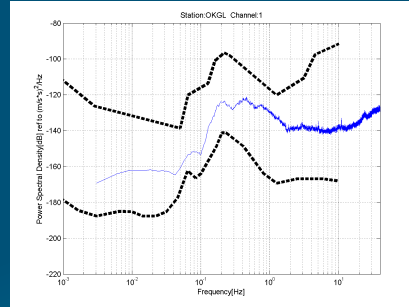
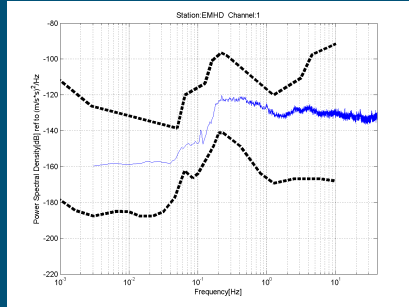
VBB Stations in operation



SP Stations in operation



# Site Survey: before Installation



# Example of BB station installed (OTSS, Jan 2007)

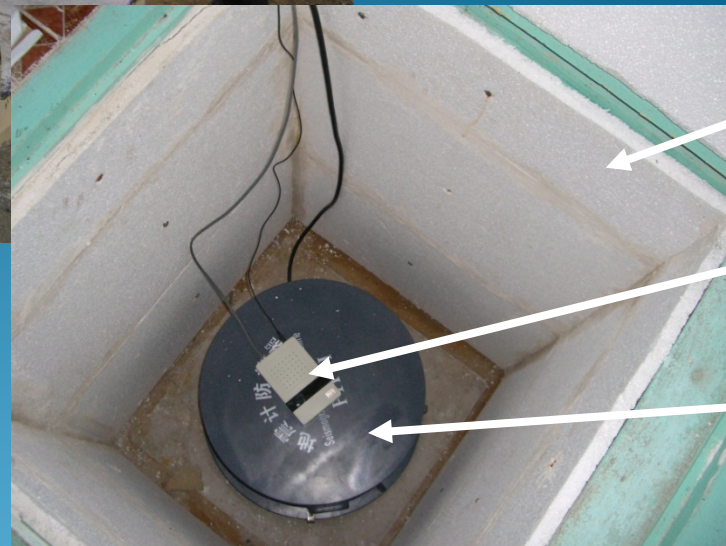
VSAT Antenna



Digitizer: EDAS-24IP



BBVS-60



Hole

Environment  
Equipment

Cover

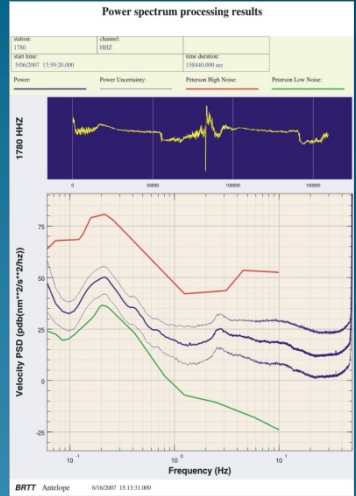
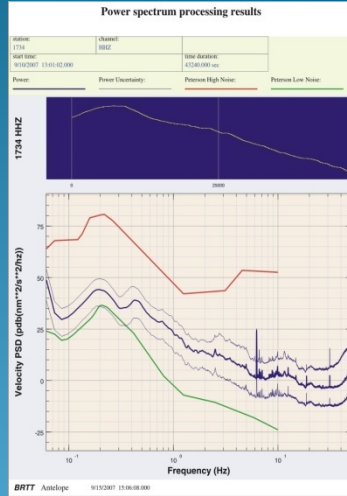
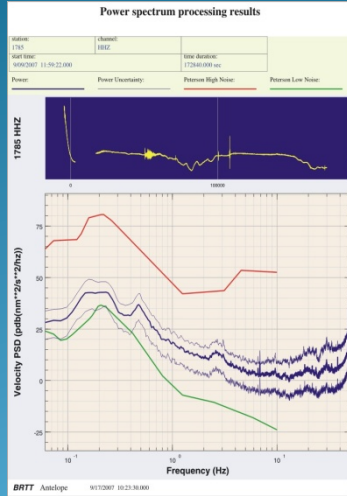
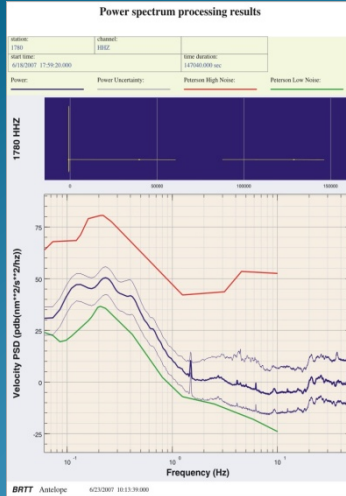
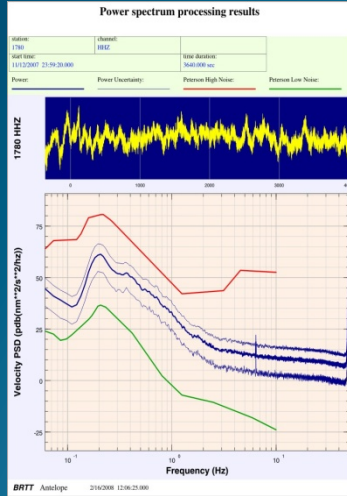
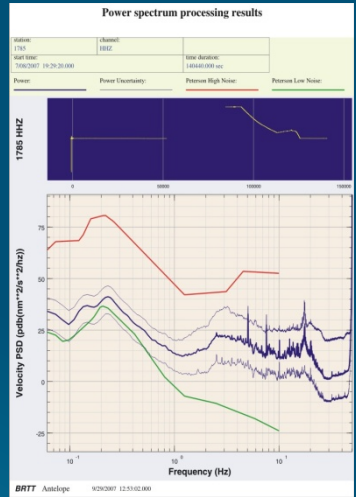
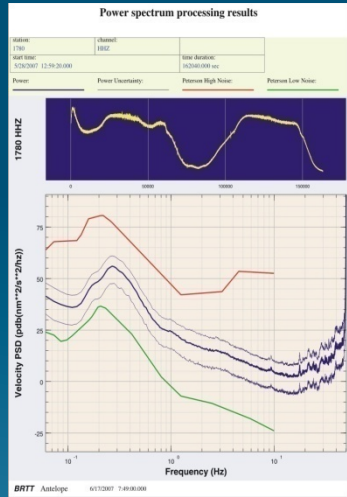
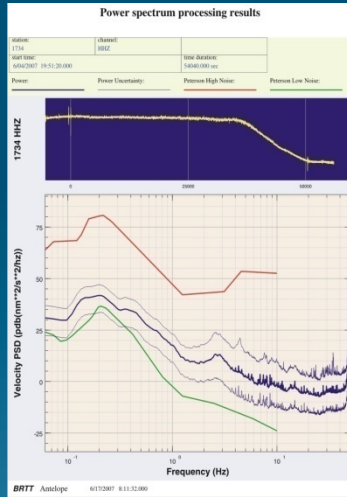
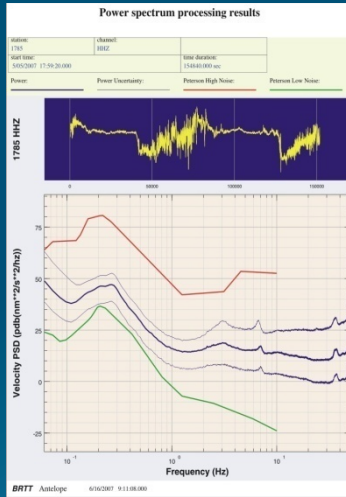
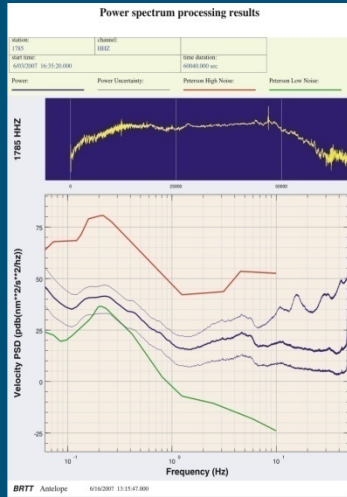


# Site Survey for New BB Stations (Geological criteria)





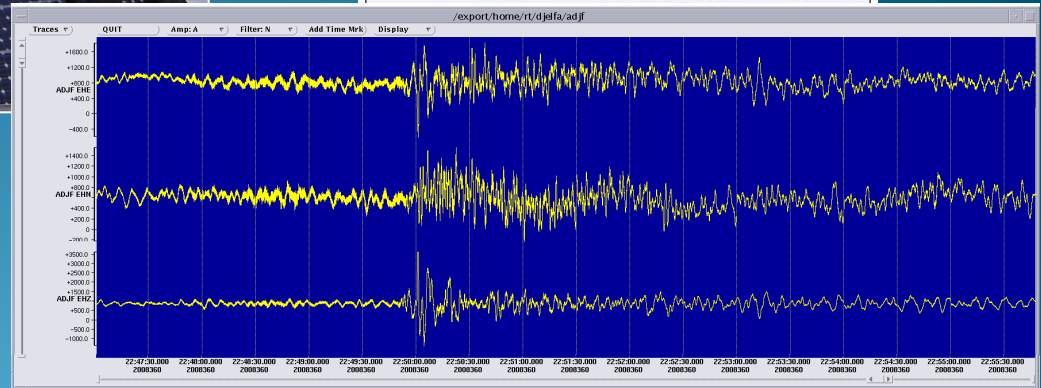
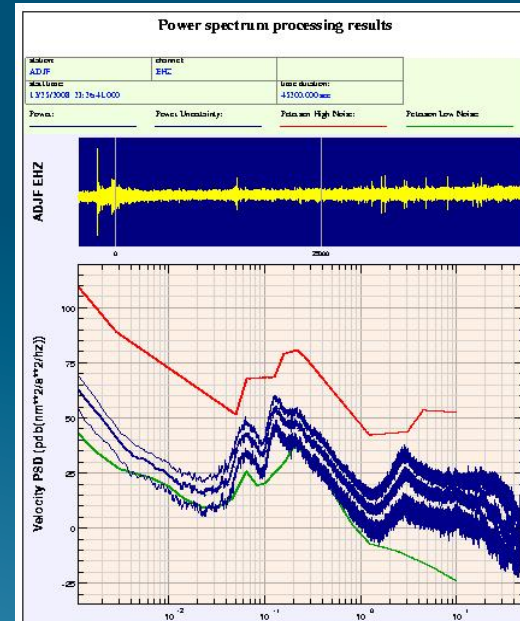
# Site Survey for New BB Stations (PSD)





# Example of New BB station installed (ADJF , Dec 2008)

VSAT Antenna  
GPS Station



Digitizer: Q330



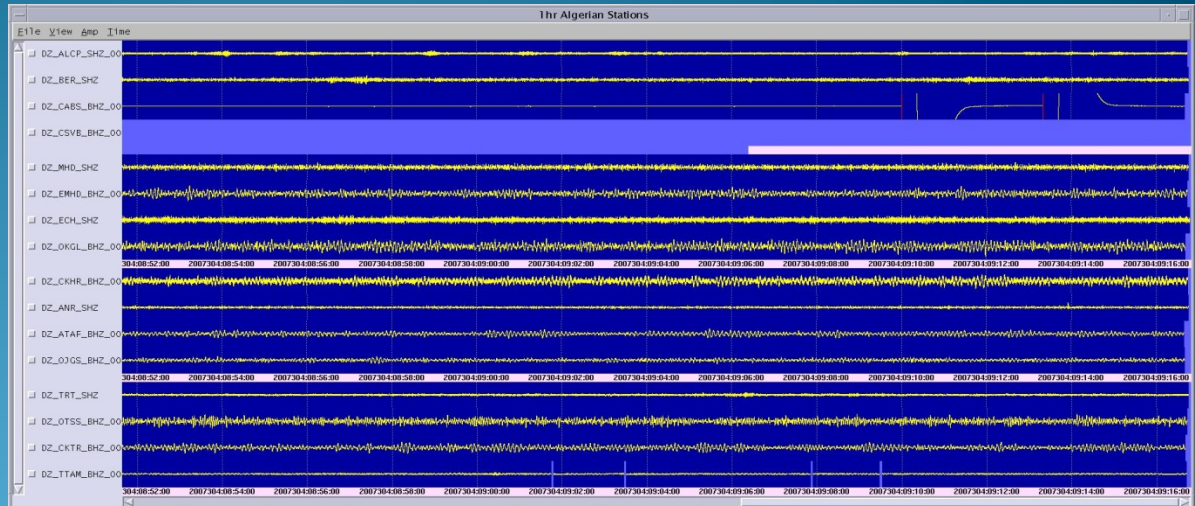
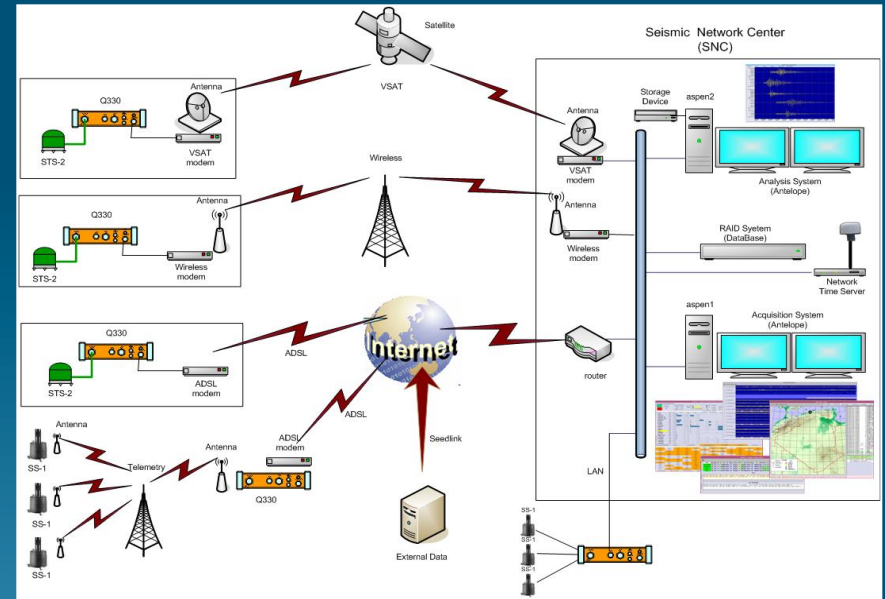
STS-2

time=25.Dec 22:40:33, mb= 5.65 NEAR COAST OF PAKISTAN

# Data Acquisition

## Number of Stations Connected :

- (23) BB Stations  
( RealTime / VSAT)
- (46) SP Stations  
( RealTime / GSM, ADSL)
- (22) Episensor  
( RealTime / GSM, ADSL)
- (02) External Stations  
(Seedlink, orb2orb, Liss)





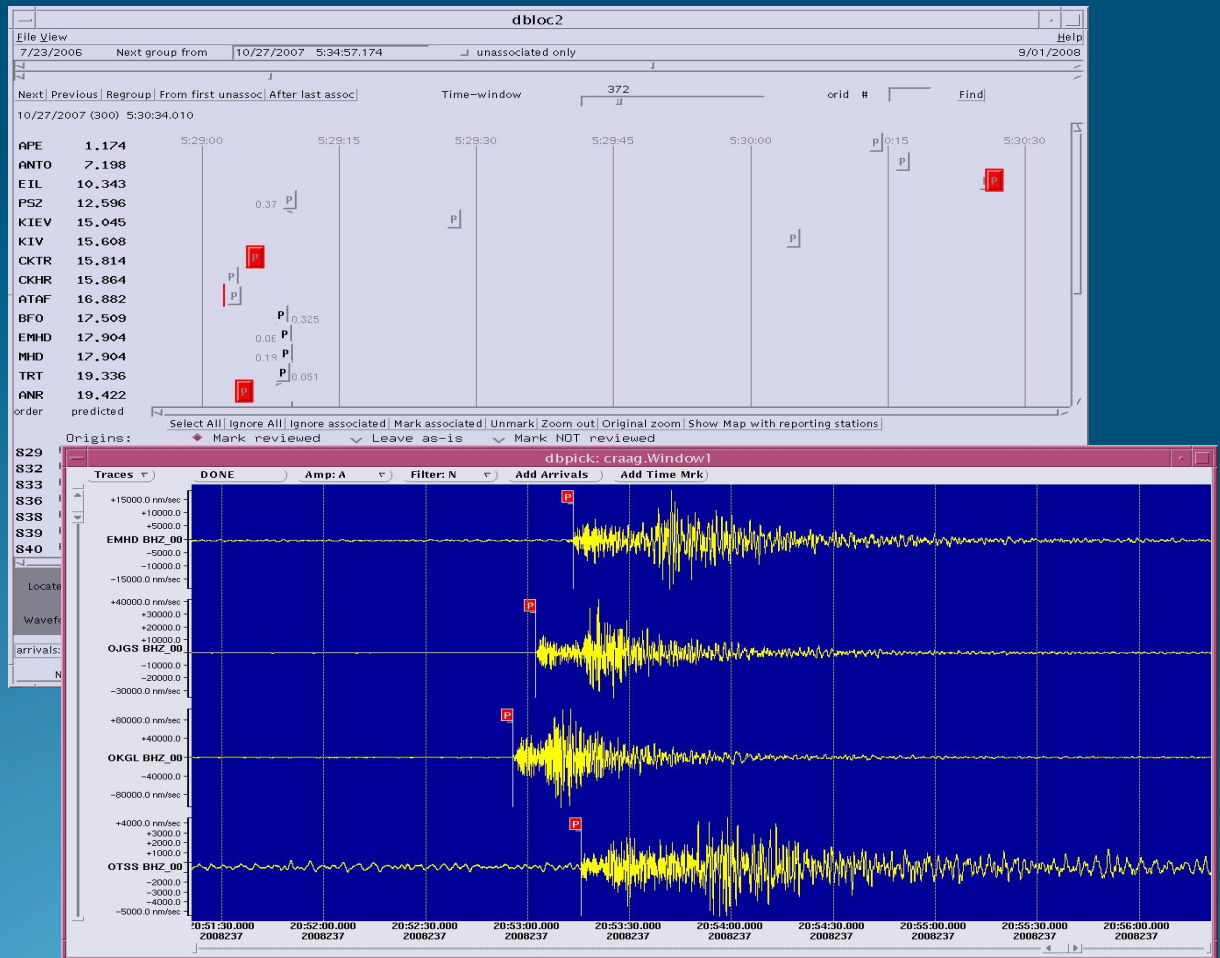
# Data Analysis

## Automatic processing

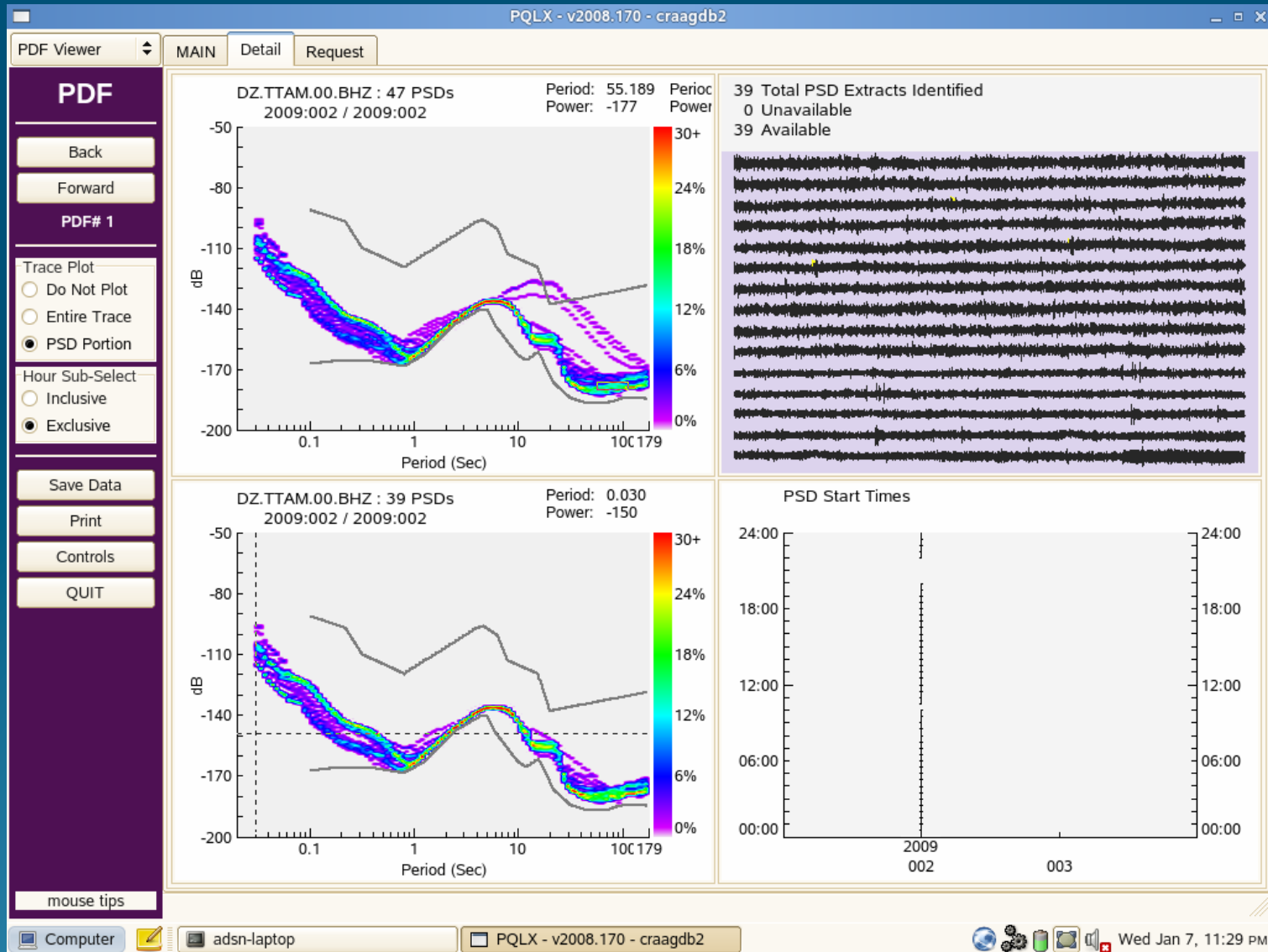
- P-wave picking
- event association
- event localization
- computation of MI or Mb
- creation of www page
- distribution of e-mail/SMS alerts (<5min)

## Manual processing

- phase picking
- event association
- event localization
- computation of MI, Mb
- creation of database
- distribution of reports/bulletins



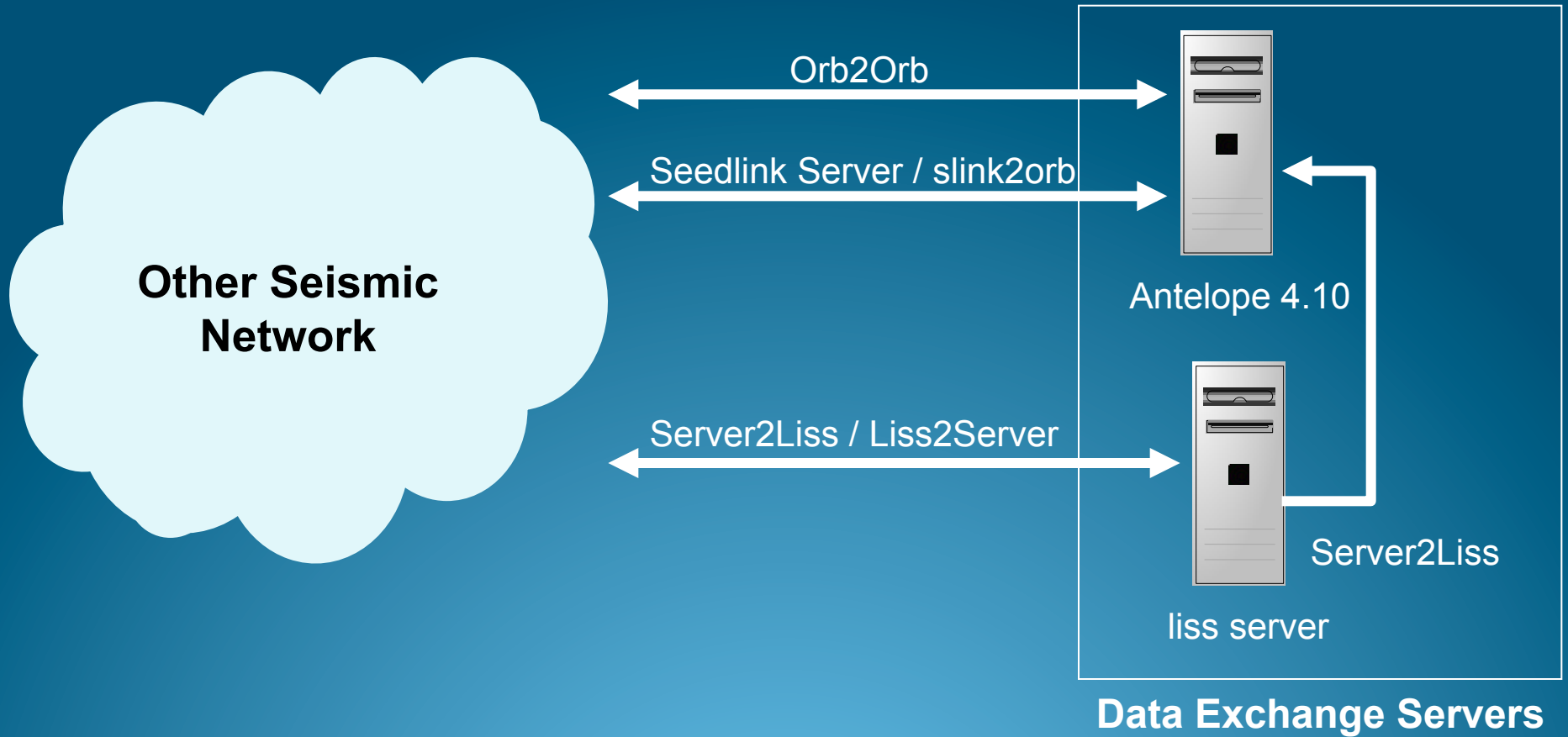
# Data Analysis : PQLX



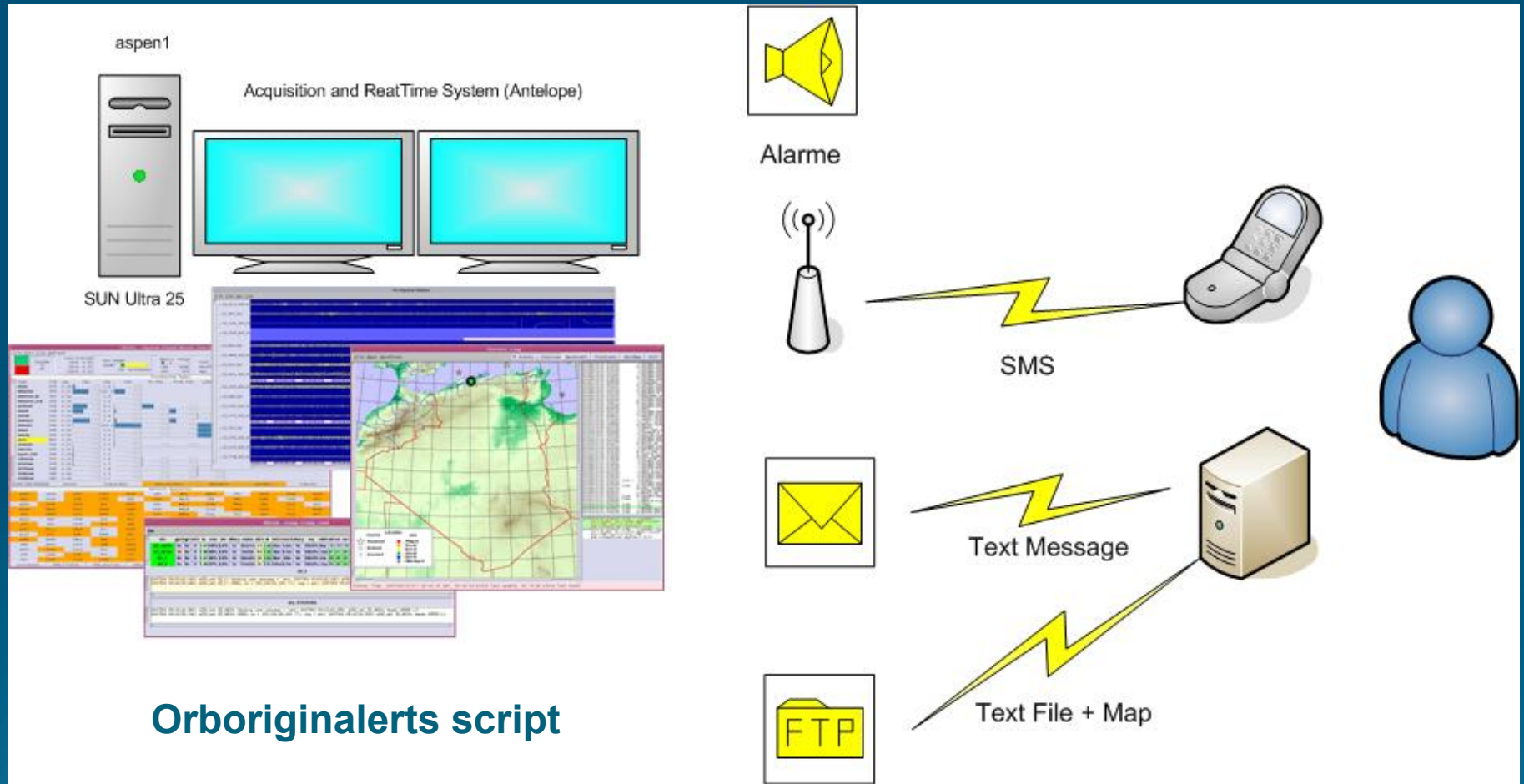


# Data Exchange

Available protocol to exchange data :

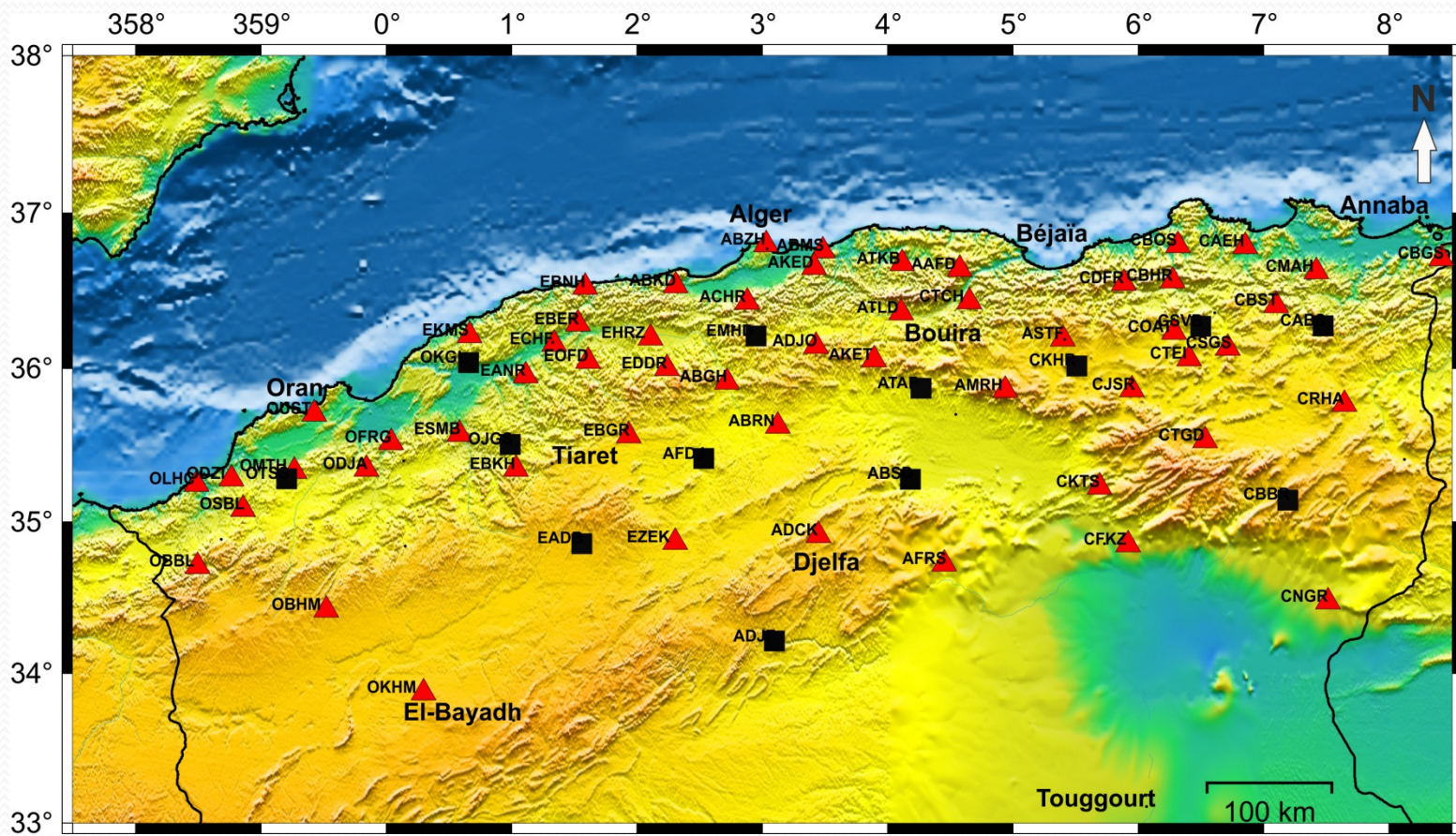


# Seismic Alert



Automatic location and sending Alert less than 5 min





# ADSN 2012

**THAK YOU FOR YOUR ATTENTION**

أكرام