A Scientific Network for Earthquake, Landslide and Flood Hazard Prevention - SciNetNatHazPrev

#### Online data of Greek accelerometer stations



Kiriaki Konstantinidou IT Operations Institute of Engineering Seismology and Earthquake Engineering



## In a nutshell

- A database with earthquake data which includes metadata about earthquake <u>events</u>, accelerometer <u>stations</u>, <u>recordings</u> as well as actual data.
- Publication of Greek Region earthquake data for years 1973 2009
- A web User Interface allows public access to the data by providing the options to:
  - Search for earthquake data according to certain criteria
- Download earthquake data
  - Online plot the data

\*

\*\*

\*



## In a nutshell

The database includes searchable metadata about

accelerometer stations (location, basic site description data)

earthquake events (date, epicentre, magnitude, depth)

recordings (location, distance from the source, actual data)

 $\mathbf{x}$ 



## **Stations**

The tool will give access to recordings from the Greek National Network of Accelerometers

A total of about 400 stations, 260 of them belonging to ITSAK

Based on the previous version of the HEAD database, we will be adding about 300 new stations and updating information for the old ones

Work has been done and is constantly in progress in providing documentation for each station (accessible from <u>http://monographs.itsak.gr</u>)

\*\*

\*\*

\*\*

\*\*



## **Events and Recordings**

Over 500 earthquake events will be accessible with M > 4 including the most important earthquakes in Greek Region since 1973

Original earthquake recordings have been processed from scratch and stored in a common, widely accepted ASCII format

Over 2500 earthquake recordings will be freely available for downloading

 $\mathbf{x}$ 

\*

\*



## The Data

- For each unique recording for the pair of event/station we will be providing the following data:
  - Unprocessed data
  - Processed Acceleration data
  - Processed Velocity data
  - Processed Displacement data
  - Processed Spectra data including
    - Pseudo-velocity
    - Pseudo-acceleration
    - Displacement



#### The Data

As regards the file names we have adopted the European Strong Motion (ESM) filename standard proposed by Orpheus. An example:

#### HI.AGR1..HNN.D.20100304.092345.X.ACC.ASC

where we can find information about the recording network (HI), the station (AGR1), the component orientation (HNN), the date time of the event, the data type (acceleration, velocity, etc) and the file type (ASCII)



## The User Interface

The tool will provide the user with different search options for finding data. Search options can be combined for more complicated queries.

- Search criteria will include date of the event, station, earthquake magnitude, region and other scientific quantities
- A map can also be used to make location specific queries.
  Using the map can limit the results in the selected geographical region
- After selecting the desired recording, the user will have the option to download or to plot the related data











#### Query: search for stations with code a\* and Vs30 between 200 and 400





Query: search for stations with code a\* and Vs30 between 200 and 400

Name	Code	Lat	Long	Heigh	Soil Class	VS30	Owner	Station Files	
Agios Vasilios	ABS1	40.6669	23.1158	0		329	ITSAK	Plot station files	and also results
Aigio	AIG1	38.2581	22.0549	0		393	ITSAK	Plot station files	are displayed below
Amaliada	AMAA	37.8	21.35	0	D	310	NOA	Plot station files	
Arta	ART1	39.1623	20.9859	0		344	ITSAK	Plot station files	
Athens, Ampithea	ATHB	37.937	23.7	0	С	287	NOA	Plot station files	



**Query**: search for stations with code a\* and Vs30 between 200 and 400. This time redefine search region to include only northern Greece.





**Query**: search for stations with code a\* and Vs30 between 200 and 400. This time redefine search region to include only northern Greece.





## **Future Prospects**

Enhance in some parts the GUI

Enrich the database with recent earthquake data from Greek region

Automate future updates with new data as they are produced by the accelerometers acquisition software

Enrich the platform with data from earthquakes of the wider Balkan and Black Sea Region

\*\*

\*

\*\*

\*



## **Technical Stuff**

The platform has been developed using the latest web technologies available.

The whole platform is developed and deployed using open source software components (OS, web server, database server, file repository, etc)

The platform is **responsive**, meaning it can be used as it is by mobile devices (smart phones, tablets) without the need to redevelop a mobile version.

\*

\*\*

\*\*





#### URL: http://head.itsak.gr

#### Please use and provide your feedback!

Project Meeting - Istanbul 12-13th November, 2015



## Thank you

Thank you for your attention! Kiriaki Konstantinidou IT Operations - ITSAK <u>kiriaki@itsak.gr</u>