

Product: Identification of alerted areas by M8S algorithm

Detailed information about the method and its application to the Italian territory is available in the following paper:

Peresan A., V. Kossobokov, L. Romashkova, G.F. Panza (2005) - "Intermediate-term middle-range earthquake predictions in Italy: a review". Earth Science Reviews, 69 (1-2), 97-132.

as well as via the following website:

<http://www.geoscienze.units.it/esperimento-di-previsione-dei-terremoti-mt.html>

M8S real-time predictions are regularly updated every six months (beginning of January and July) since January 2002.

A complete archive of predictions is accessible via the following web page:

http://www.ictp.trieste.it/www_users/sand/prediction/prediction.htm

M8S current predictions for Italy are protected by password.

In fact, although M8S predictions are intermediate-term and by no means imply a "red alert", there is a legitimate concern about maintaining necessary confidentiality.

Password can be requested by mail to: aperesan@units.it

We assume that requesting the credentials to access current predictions, implies accepting to take the necessary precaution against premature release of predictions.

Information and files description:

M8S analyzes seismicity within a large set of circles covering the monitored territory, and eventually determines circles that are in state of alarm (i.e. a TIP).

TIP: Time of Increased Probability, with respect to normal conditions, for the occurrence of a target event within the monitored region.

M8S application to the Italian territory is performed for three magnitude ranges of target events, namely:

M5.5+ that is $5.5 \leq M < 6.0$

M6.0+ that is $6.0 \leq M < 6.5$

M6.5+ that is $6.5 \leq M < 7.0$

The provided archive of M8S results includes:

REAL TIME PREDICTIONS: January 2002 – January 2016

RETROSPECTIVE IDENTIFICATION OF TIPS: January 1972 – December 2001

Note that parameters for the target events (e.g. magnitude estimates) are those reported in the input earthquake catalog (namely UCI+ISC) as on the time of the first prediction updating, which follows the occurrence of the target event.

(example: for an earthquake occurred on June 10, parameters are those reported in the updated catalog as on July 1 updating of predictions)

FOLDERS:

\M5.5_PREDICTIONS

Contains the files (one for each updating time) with the coordinates of circles monitored and eventually alerted for an earthquake with magnitude in the range $5.5 \leq M < 6.0$

The radius of monitored/alerted circles is $R=106$ km

The FILES names are as follows:

FCNXXY55.RES where XX=year Z=month code (0=January 5=july)
(Example: FCN11055.RES File with predictions for M5.5+ as on January 2011)
Each file includes the following information: (Lat, Lon, Code)

- coordinates of monitored circles (Lat, Lon)
- Code: 1=TIP 0=no TIP

\M6.0_PREDICTIONS

Contains the files (one for each updating time) with the coordinates of circles monitored and eventually alerted for an earthquake with magnitude in the range $6.0 \leq M < 6.5$
The radius of monitored/alerted circles is $R=138$ km

The FILES names are as follows:

FCNXXY60.RES where XX=year Z=month code (0=January 5=july)
Each file includes the following information: (Lat, Lon, Code)

- coordinates of monitored circles (Lat, Lon)
- Code: 1=TIP 0=no TIP

\M6.5_PREDICTIONS

Contains the files (one for each updating time) with the coordinates of circles monitored and eventually alerted for an earthquake with magnitude in the range $6.5 \leq M < 7.0$
The radius of monitored/alerted circles is $R=192$ km

The FILES names are as follows:

FCNXXY65.RES where XX=year Z=month code (0=January 5=july)
Each file includes the following information: (Lat, Lon, Code)

- coordinates of monitored circles (Lat, Lon)
- Code: 1=TIP 0=no TIP