

**Response to the Referee #3**  
**for**  
**“A Homogeneous Earthquake Catalogue for Turkey and Surrounding Region”**  
**by Onur Tan**

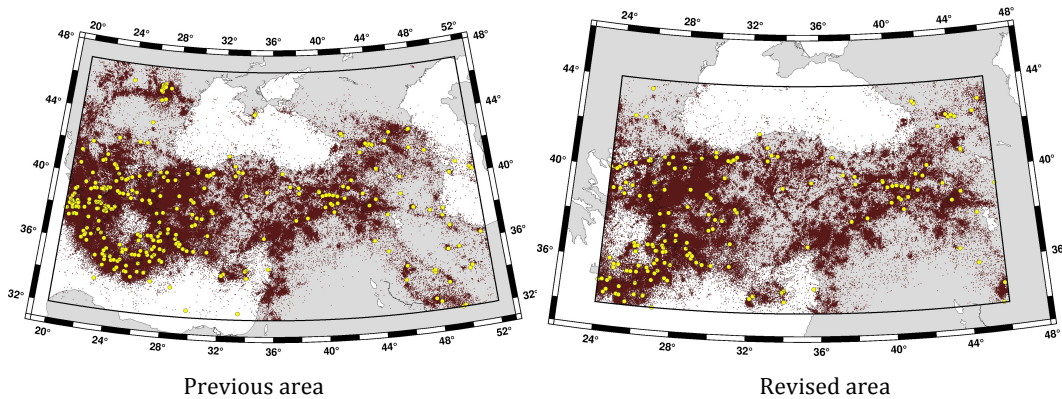
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## General

First, I want to thank to all referees for their vulnerable comments. I revised the database and manuscript (MS) according to their comments.

The main revisions:

- The title was changed: "A Homogeneous Earthquake Catalogue for Turkey"
- The catalogue area was reduced according to the common comments: 34°-44° N 24°-46° E



- The events in the period of Jan-Oct 2018 were included because ISC updated the database.
- $M_w^* = 0.0$  events were removed from the database.
- The database was reanalysed.
- All numerical outputs, tables, and figures were updated

## Response to Referee #3

*1. Earthquake catalog is an essential tool for seismology and seismology engineer. For seismic hazard analysis, in general, we convert the different magnitude scales to  $M_w$  (Harvard, CMT). How do you calculate the  $M_w^*$ ? What is the relation between  $M_w$  (Harvard, CMT) and  $M_w^*$ ?*

The individual  $M_w$  estimations of the institutions are not the scope of this study. In my opinion, either Harvard or another institution is not a monopoly for  $M_w$  calculations. Therefore, I am against to use the parameters of one institution for magnitude homogenisation.

I prepared the  $M_w^*$  catalogue with the same strategy for the Sinop Nuclear Power Plant (Turkey) and it was accepted in the SSHAC Level-2.

*2. After you convert the different magnitudes scale to  $M_w^*$ , how many events are the magnitudes equal to or great than 6.0?*

There are 179 events occurred in the newly defined area. I added the number to the caption of Fig 3:

*Figure 3. The earthquakes in the homogenised catalogue (dots). Yellow circles are the events with an equivalent moment magnitude ( $M_w^*$ ) greater than 6.0 (total 179 events).*

*3. As described as 2., how many events are the crust earthquakes? mid-depth earthquakes ?*

The study area was narrowed according to the referees' common comments.

There are only 795 events with  $h > 40$  km and  $M_w > 4$  in the new catalogue area. It is very small part of the catalogue.

*4. The  $M_c$  is closed related with seismic stations dense, how many seismic stations are installed within the Turkey country?*

The number of active stations in Turkey is about 1240. Kandilli observatory (KOERI) has 116 weak-motion and 113 strong-motion stations. AFAD has 309 weak-motion and 679 strong-motion stations.

I mentioned the total number of the station in Turkey:

*The earthquake information for Turkey comes from two national networks operated by the KOERI and AFAD. Both institutes have a large number of stations around Turkey (~1240) and report recent events online.*