The authors have improved their article to a great extent and provided the necessary information to run their model in a PSHA calculation. The Excel files are very much appreciated. This article can be published after some corrections are made and some figures are improved.

General remarks:

Many references cited in the text are missing :

P2 : Saroglu et al 1992 ; P4: Mert et al 2016, Laigle et al 2008, Harris et al 2002, Mignan et al 2015 ; P7 : Sesetyan er al 2016 ; P8 : Moschetti et al 2015 ; P9: Hanks and Bakun 2014; P10: Brodsky et al 2000, Field et al 2009; P13: Field et al 2013

Discussion of the results: Instead of plotting the distribution for each hypothesis (single faults or complex rupture), I suggest to plot the distribution of the final result of each model after the weighting in order to check the validity of the model against the data. This will provide the reader and (the user) a better visualization of the epistemic uncertainty affecting the model than separating the mean single segment ruptures and multi segment ruptures (such as presented in the present version of the article).

See here after an example for the Duzce fault made using the supplementary material.

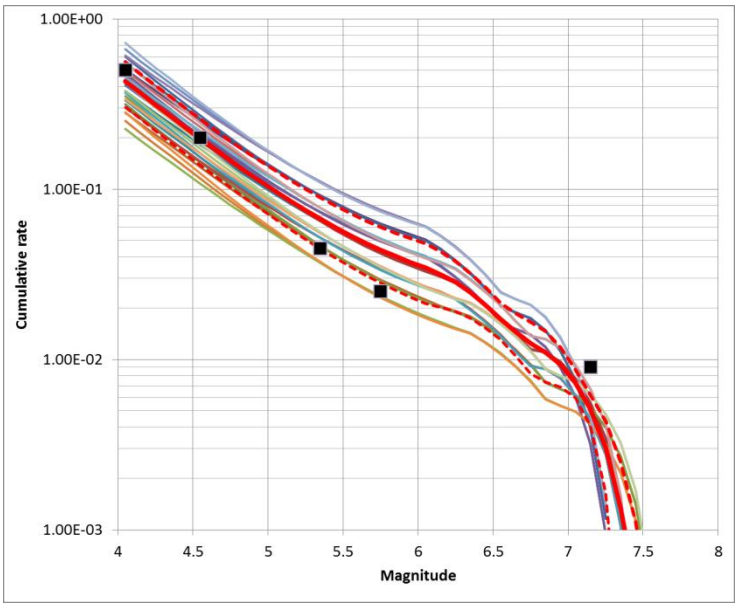

Figure: Cumulative earthquake rate for the Duzce fault system. Black squares are the rate of the catalogue. Red line: weighted mean of the logic tree. Dotted line: + and – sigma.

For these results to be “ready to use”, the supplementary information should describe the hypotheses behind each branch. A system of branch number can be used; for example:

	Branch 1	Branch 2	Branch 3
b value 1	1	0	…
b value 2	0	1	
b value 3	0	0	
Mmax1	1	1	
Mmax2	0	0	
Mmax3	0	0	
slip-rate 1	1	1	
slip-rate 2	0	0	
slip-rate 3	0	0	

Hereafter are some more specific remarks:

P1L27 “Parson collected” should be change to “Parson proposed” in my opinion.

P3L2 “more complicated” should be changed to “more detailed”.

P3L9 Rephrase the sentence. The “however” can be removed.

P4L2 Murru et al 2016 uses a dip of 60° for the South Cinarcik fault. Please cite the source of this near vertical dip.

P4L2 Please explain here that the model developed here is only valid for PSHA in Istanbul, not for the whole Marmara region.

P5L29 Missing citation of Sengor 2014.

P5L31 Why Hergert and Heibbach 2010; and Ergintav 2014 are not cited?

P6L4 The authors here claim to achieve a better fit by changing the slip-rate on the northern strand of the NAF. Please provide reference or a more detailed analysis in order to justify a change of the slip-rate of a major fault.

P6L24 “proposal” needs to be changed. Murru et al 2016 are not calculating or measuring slip-rates, please cite the references in Murru et al 2016 that led them to set this value of slip-rate.

P6L31 Herget et al needs to be changed in Hergert and Heidbach.

P8L21 Please provide a reference for the truncated exponential equation.

P10L4 The weighted average of the slip-rate is an important assumption of the methodology, I think it deserve to be written as an equation to help the reader understand.

P10L25 “utilized” => “used”

P12L8 The value of Mmax used in the background deserves to be clearly indicated in the text.

P12L10 please give a reference for the value of 18 km used as a seismogenic depth.

P12L14 The authors claim to explore the uncertainties affecting the slip-rate and the Mmax. Please describe more where these uncertainties are explored and how the results are affected. The supplementary material unfortunately doesn’t contain any information concerning the logic tree.

P12L31 Please provide references of ongoing paleoseismic research.

P12L32 the last two sentences of this paragraph should be in the introduction as they are a reason why you had to develop your alternative approach to UCERF3.

P13L15 Unsure if it is necessary to precise that the table document your model. It’s self-explanatory in the article.

P13L19 The fact that this model is only valid for calculations in Istanbul needs to be stressed throughout the article.

Figure 1 : please place a) b) c) d) e) on the figure. The last sentence of the caption is not necessary.

Figure 4 needs to be improved. Use finer lines and points (such as in Figure 6) in order to let the reader see the value of each single point.

Figure 6 in the caption; explain what are a) b) c) d). Be careful when using excel figure with a logarithmic scale, the last point tends to be cut. For this reason, it is not possible to read the standard deviation of the rate for the largest magnitudes.

Supplement :

Background rates : please give the rates for each b value of the logic tree.

Fault rates : please give and explanation of the hypothesis of the branches.