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Nonlinear Processes in Geophysics
Discussions
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Interactive comment on "Full-tensor gravity gradient eigenvector analysis for locating complex geological source positions" *by* Boxin Zuo et al.

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Reply 1. We added an additional theoretical analysis as shown in Eq.(6) ,Eq.(7). This part is wrote to prove that the method is suitable for sources overlapping condition and $\tan\varphi$ will not be a infinitely value in practice. We think this is important for real data processing, so we make a theoretical analysis carefully. The proposed method estimate the boundary according to the value of $\tan\varphi$. It will nearly equal to 0 at the position of source boundary. The value of $\tan\varphi$ is estimate according to the data directly. So the proposed method does not need the information of the density contrast of sources.

Reply 2. Actually, we do not rotate the tensors. We use the expression of "rotation of the coordinate system" to illustrate the physical meaning of tensor eigenvector decomposition. As Beiki (2010) and Li (2015) suggestion that the eigenvector decomposition

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could be considered as a “rotation of the coordinate system”.

Reply 3. The practical geological structure is complex. Usually, the sharp of source is irregular, and the surface of it is unsmooth. As we know, the GGT data contains detail geological information, and more information can be extracted through algorithms. Fig.13 f does not map for illustrating the boundary of sources. It is a tanÏŢ map which is used to display the centroids and distribution of sources. Fig.11 is draw for delineate the boundary of source.

Reply 4. The contour lines in Fig.4 have color which is listed by the color bar. We defined GTA as a relative numerical measurement.

Reply 5. Fig.13 f is not listed for illustrating the boundary of sources. And for the reason of display the map clearly, we limit the maximum value of the map to 12. The contour map is displayed in Fig.11.

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