Remaining comments for final revision. Below you will find the comments for the email sent to us. After each comment you will find either a reply to the comment or a reply with a suggestion for how we took care of the comment in the manuscript.

Comment 1.- Add some keywords related to compositional data:  
compositional data, log-ratio, simplex ...

Answer: We have added the keywords compositional data and log-ratio to the manuscript. We are hesitant if log-ratio should be included as a keyword but we leave it to the editor to decide.

Comment 2.- Lines 320--322: repeated statement; delete one of the two.

Answer: Done

Comment 3.- Eq. (2) a subscript "n" is missing.

Answer: Fixed  
  
Comment 4.- Line 372: "One such transformation is isometric log-ratio (ilr) transformation..." should be "One such transformation is the isometric log-ratio (ilr) transformation..."

Answer: Fixed  
  
Comment 5.- Lines 686-698. They contain some confusing uses of ilr-transformation. I propose (optional) to substitute the text copied below by a new version.  
  
"Next, two columns are extracted from matrix A to create the new matrix B:  
B = [a\_\*k, a\_\*l] ;   (5)  
where a is an element of matrix A, and k and l are the columns that represent items that are tested for equality, "\*" denotes all rows of corresponding column.  
The ilr transformation is then applied to each row of the matrix B and  
the new vector C is obtained. The equation for calculating elements of C using ilr transformation is:  
c\_i = ilr(bi1; bi2) = sqrt(0.5) log(b\_i1/b\_i2),   (6)  
where c\_i is the i-th element of C and b\_i1 and b\_i2 are the first and second  
elements in the i-th row of B. Each value c\_i represents a log-ratio between  
values of columns k and l. The mean of the values of C can be interpreted as  
an average log-ratio between the items that expresses the difference between  
the items."  
  
An alternative version:  
It implies to suppress the two-column matrix B which has no further use. The vector C is replaced by a vector B (thus recalling balance). If this new version is adopted, change carefully the previous notation c\_i by b\_i in this section.  
  
In order to compare items k and l in the i-th row of the matrix A, the log-ratio  
b\_i(k,l)= sqrt(1/2) log(a\_ik/a\_il) ,  
is computed. It is the simplest version of a "balance" between the k and l components (Egozcue and Pawlowsky -Glahn, 2005, 2006) and, in this case, is proportional to a simple log-ratio. The normalizing constant sqrt(1/2) comes from the ilr-transformation (Egozcue et al. 2003). It is required to make this log-ratio compatible with other more complex balances, i.e. log-ratios involving more components, used as coordinates of compositions. The mean value of the vector B containing b\_i(k,l), i=1,2,... can be interpreted as the average difference between the k and l items.  
  
New non-considered references:  
Egozcue, J. J. and V. Pawlowsky-Glahn:  
Groups of parts and their balances in compositional data analysis,  
Mathematical Geology, 37, 7, 799-832, 2005.  
  
Egozcue, J. J. and V. Pawlowsky-Glahn:  
Simplicial geometry for compositional data.  
In: Buccianti, A., Mateu-Figueras, G. and Pawlowsky-Glahn, V., (eds)  
Compositional Data Analysis in the Geosciences: From Theory to Practice.  
Geological Society, London, (ISBN: 1-86239-205-6),  
Special Publications, 264, 67-77, 2006.  
  
If the previous paragraph is changed then:  
  
Line 702 ...in terms of log-ratios it means determining the probability of b\_i(k,l) as being in the range of 3/4 to 4/3.

Answer: Since the reviewer indicates that this change is “optional” we select to not make this change. We feel that our version is clearer ☺ Other reasons are that i) we might introduce faults in the manuscript at this late stage and ii) adding those two references would mean that we would need more time to read them in detail first.  
  
Comment 6.- Lines 731-732:  
after change of notation should be  
730 ...kernel density estimation on the balances of priority values b\_i(k,l) in the vector B. The values a, b are a=sqrt(1/2) log(3/4) and b=sqrt(1/2) log(4/3). Anyway the previous notation using e.g. ilr(3,4) is not admissible.

Answer: Fixed.  
  
Comment 7.- In Fig. 1, one of the priorization vectors does not add to 100.

Answer: The figure has been fixed.