
In this appendix are shown the planes associated to the highest nodes of the hierarchies built on both soil and species presence / absence Campos data with the proposed HFC method. Refer to the paper text for further explanations of the contents.

**Figure A1. HFC of Campos soil variables.** Representation of the variables and the quadrats on the principal plane associated to the node 31 of the HFC of variables. *31*1 and *31*2 are the corresponding principal components. *30* and *28* are the representative variables of the nodes 30 and 28 respectively. The negative scores are in the right and above in order to agree with the PCA ordination.
Figure A2. HFC of Campas soil variables. Representation of the quadrats on the principal plane associated to the node 31 of the HFC of variables. *31*1 and *31*2 are the corresponding principal components. The negative scores are in the right and above in order to agree with the PCA ordination.
Figure A3. The factorial plane associated to the node 119 of the hierarchy of species using HFC on species presence-absences, Campos grassland data. The axes *119*1 and *119*2 are the factors and the lines *118*1 and *115*1 are the representative variables of nodes 118 and 115 respectively.
Figure A4. The factorial plane associated to the node 115 of the hierarchy of species using HFC on species presence-absences, Cam pos grassland data. The axes $115^1$ and $115^2$ are the factors and the lines $113^1$ and $112^1$ are the representative variables of nodes 113 and 112 respectively.
Figure A5. The factorial plane associated to the node 116 of the hierarchy of species using HFC on species presence-absences, Campos grassland data. The axes *116*1 and *116*2 are the factors and the lines *110*1 and *105*1 are the representative variables of nodes 110 and 105 respectively.
Figure A6. The factorial plane associated to the node 117 of the hierarchy of species using HFC on species presence-absences, Cama pos grassland data. The axes *117*1 and *117*2 are the factors and the lines *103*1 and *114*1 are the representative variables of nodes 113 and 114 respectively.