**Supplementary material table S5:** Metadata obtained from *Ellipsoid niche model*, the results obtained by the MVE1 method at level 99, including the centroid coordinates, covariance matrix, volume, semi-axes length, and axes coordinates. The semi-axes length are represented by a, b, and c, and the axes coordinates are represented by the vectors vec\_1 and vec\_2. The covariance matrix shows the variances and covariances among the principal components (pc\_1, pc\_2, pc\_3). The volume is given in arbitrary units.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **pc\_1** | **pc\_2** | **pc\_3** |
| Centroid | 1.344 | -2.046 | 0.604 |
| Covariance | 0.134 | 0.134 | 0.161 |
|  | 0.134 | 0.521 | 0.350 |
|  | 0.161 | 0.350 | 0.422 |
| Volume | 13.462 |  |  |
| Semi-axes | a | b | c |
| Length | 0.818 | 1.230 | 3.165 |
| Axes | pc\_1 | pc\_2 | pc\_3 |
| Coordinates |  |  |  |
| a | 2.036 | -1.928 | 0.184 |
|  | 0.651 | -2.163 | 1.025 |
| b | 1.916 | -2.887 | 1.312 |
|  | 0.772 | -1.204 | -0.103 |
| c | 0.499 | -4.325 | -1.424 |
|  | 2.188 | 0.233 | 2.633 |