Corrigendum

GeoPCA: a new tool for multivariate analysis of dihedral angles based on principal component geodesics

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The authors wish to draw attention to an error in their published article.

The original Figure 3 is not the correct output from the dPCA method due to an error in unit conversion. The corrected Figure 3 is shown below:

![Figure 3](https://example.com/figure3)

*A 2D plot of the first two principal components in Figure 3 shows that dPCA allows a distinction of non-helical C3'-endo nucleotides belonging to cluster I (black circles), II (green circles) and V (red circles).*

In addition, we would like to explain the meaning of the following statement:

“A 2D plot of the first two principal components in Figure 3 shows that dPCA cannot distinguish non-helical C3'-endo nucleotides belonging to cluster I (black circles), II (green circles) and V (red circles).”

should be replaced with:

“A 2D plot of the first two principal components in Figure 3 shows that dPCA allows a distinction of non-helical C3'-endo nucleotides belonging to cluster I (black circles), II (green circles) and V (red circles).”

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To our knowledge, mathematical justification of dPCA attempts to establish a one-to-one correspondence (bijection) between higher dimensional torus/sphere and Euclidean space. However, such one-to-one correspondence does not guarantee equivalence between torus/sphere and Euclidean space and therefore does not justify application of linear methods to circular data. For example, it is possible to establish bijection between a circle and a real line, but such bijection does not justify application of linear statistics to circular data, hence circular statistics have been developed to treat angular data.

The rest of the findings and conclusion of the article are not affected and remain valid. The authors apologize to the readers for this error and any inconvenience caused.