**Supplementary data for**

**Spectral characterization of dissolved organic matter along**

**trophic gradients: Potential indicators of eutrophication of**

**plateau lakes in Southwest China**

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# Conflict of Interest：The authors declare that they have no conflict of interest

**Table of Content**

**Table S1** The ranges of Excitation and Emission wavelength of the three identified components of fluorescent dissolved organic matter (FDOM) by parallel factor analysis (PARAFAC).

**Fig.S1** Variation in Fn(355) and fluorescent components for the DOM in different trophic states of Erhai watershed from November of 2018 to July of 2019.

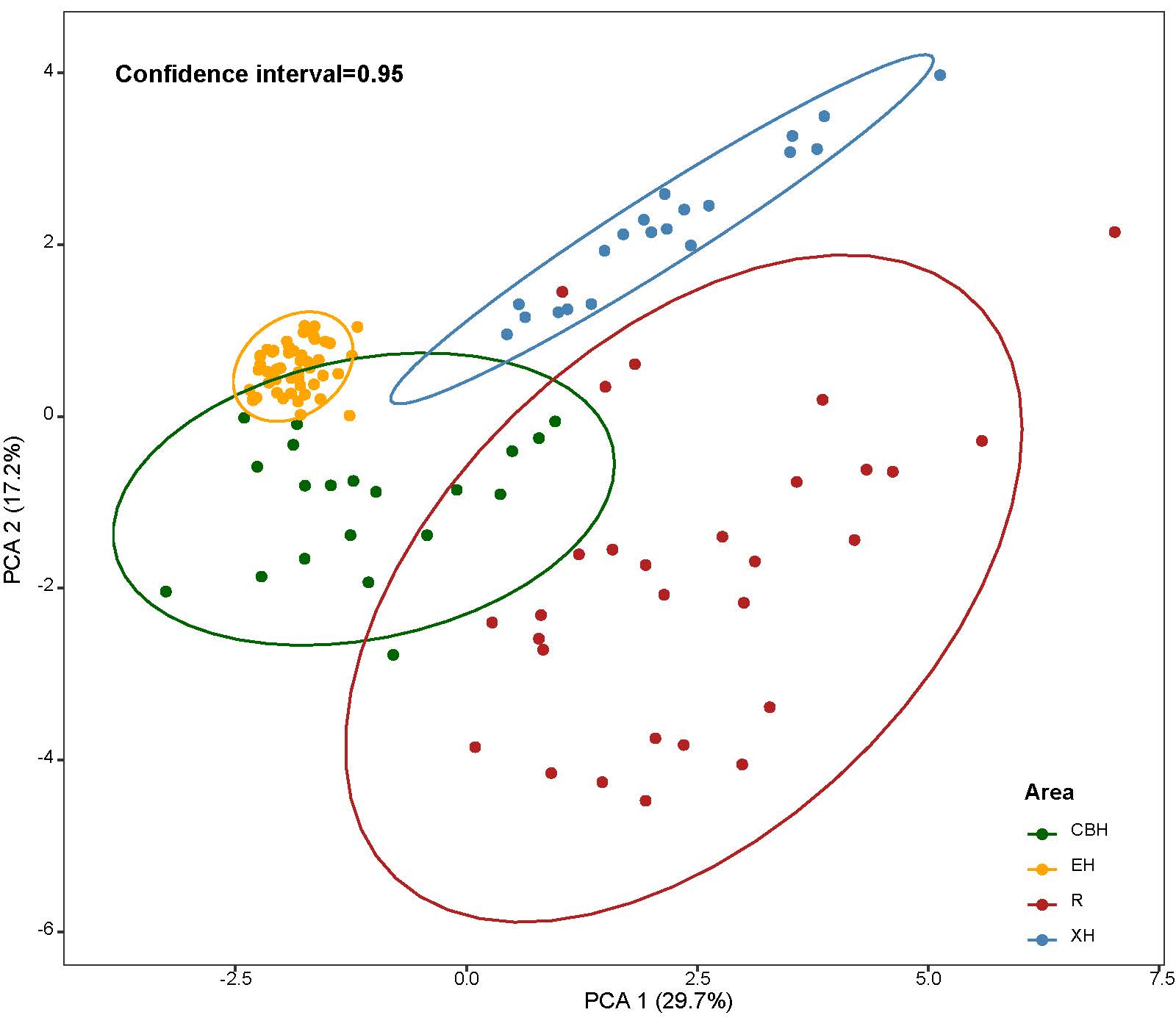
**Fig.S2** The principal component analysis (PCA) of colored dissolved organic matter (CDOM) absorption, fluorescent dissolved organic matter (FDOM) index, and environment factors.

**Table S1** The ranges of Excitation and Emission wavelength of the three identified components of fluorescent dissolved organic matter (FDOM) by parallel factor analysis (PARAFAC)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Component | Ex/Em (nm/nm) | Description and source Chen et al. (2003) | Tradition peak Coble (1996) | | Description | Reference |
| C1 | 220/292 | Tyrosine-like protein | B | Autochthonous DOM | | C3:≤225(275)/322 (Zhang et al. 2010)  C1:225/305 (Zhang et al. 2020) |
| C2 | 230/356 | Tryptophan-like protein | T | Low molecular weight, microbial-derived or autochthonous DOM | | C1:230/344 (Yao et al. 2011)  C5: <250/370 (Williams et al. 2010)  C5:225, 280/350 (Yang et al. 2019) |
| C3 | 245/458 | Humic-like | A | Plant or soil-derived DOM; possible microbial activity | | C1: <255(355)/410 (Qin et al. 2020)  C2：250(335)/455 (Lin and Guo 2020) |



**Fig.S1** Variation in Fn(355) and fluorescent components for the DOM in different trophic states of Erhai watershed from November of 2018 to July of 2019. The % of the peaks per catchment type stand for the mean percentage of each fluorescence component intensity in the total fluorescence intensity for all sampling sites.



**Fig.S2** The principal component analysis (PCA) of colored dissolved organic matter (CDOM) absorption, fluorescent dissolved organic matter (FDOM) index, and environment factors. All samples are divided into four groups with various colors according to PCA. The horizontal axis and the ordinate represent the first and second principal components respectively, which could explain 46.9% variations in total.

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