**Appendix 2.** (A)Input ratios of matrices used in this study. Pigments to Chl-a ratios used in this matrix is from Mackey et al. (1996).(B) Output ratios of matrix (after 60 runs)

**A**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Class** | **Marker pigments** | | | | | | |
|  | **fuco** | **Ddx** | **perid** | **19hex** | **zeax** | **chl\_b** | **chl\_a** |
| Diat | 0,755 | 0,448 | 0 | 0 | 0 | 0 | 1 |
| Dino | 0 | 0,121 | 0,532 | 0 | 0 | 0 | 1 |
| Cocco | 0,622 | 0,157 | 0 | 0,680 | 0 | 0 | 1 |
| Chloro | 0 | 0 | 0 | 0 | 0,059 | 0,285 | 1 |
| Eugleno | 0 | 0,230 | 0 | 0 | 0 | 0,406 | 1 |
| Cyano | 0 | 0 | 0 | 0 | 0,334 | 0 | 1 |

Fuco, Fucoxanthin; Ddx, Diadinoxanthin; perid, Peridinin; 19hex, 19’-hexanoyloxyfucoxanthin; zeax, Zeaxanthin; chl\_b, Chlorophyll b; chl\_a, Chlorophyll a; Diat, Diatoms; Dino, Dinoflagellates; Cocco, Coccolithophores; Chloro, Chlorophytes; Eugleno, Euglenophytes; Cyano, Cyanophytes.

**B**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Class** | **Marker pigments** | | | | | | |
|  | **fuco** | **Ddx** | **perid** | **19hex** | **zeax** | **chl\_b** | **chl\_a** |
| Diat | 0,782 | 0,454 | 0 | 0 | 0 | 0 | 1 |
| Dino | 0 | 0,108 | 0,517 | 0 | 0 | 0 | 1 |
| Cocco | 0,621 | 0,163 | 0 | 0,718 | 0 | 0 | 1 |
| Chloro | 0 | 0 | 0 | 0 | 0,057 | 0,237 | 1 |
| Eugleno | 0 | 0,238 | 0 | 0 | 0 | 0,384 | 1 |
| Cyano | 0 | 0 | 0 | 0 | 0,326 | 0 | 1 |