



Supplement of

Net primary production annual maxima in the North Atlantic projected to shift in the 21st century

Jenny Hieronymus et al.

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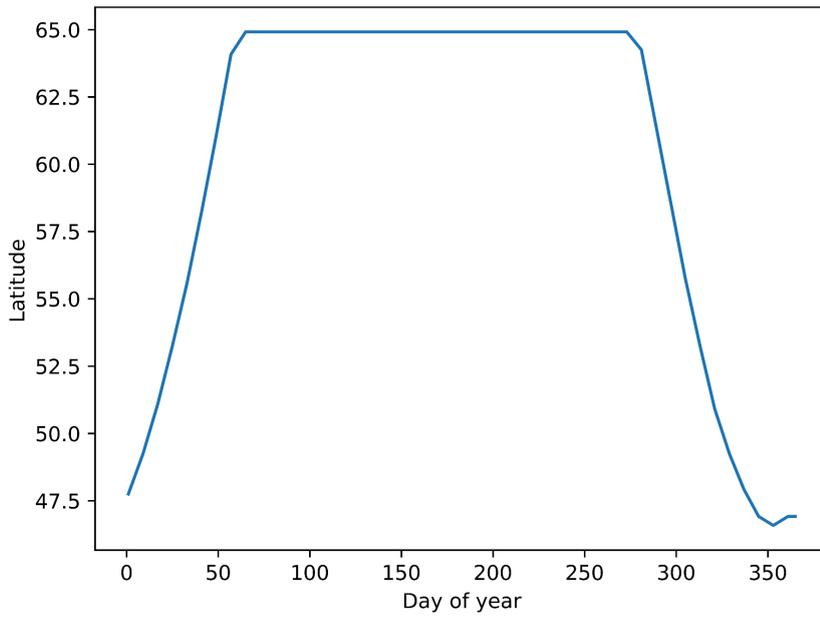


Figure S1. The maximum latitude seen by satellites in winter used for Figures 2 and 3 and Table 1. Note that the upper boundary of 65° is because it is the upper limit for the investigated domain.

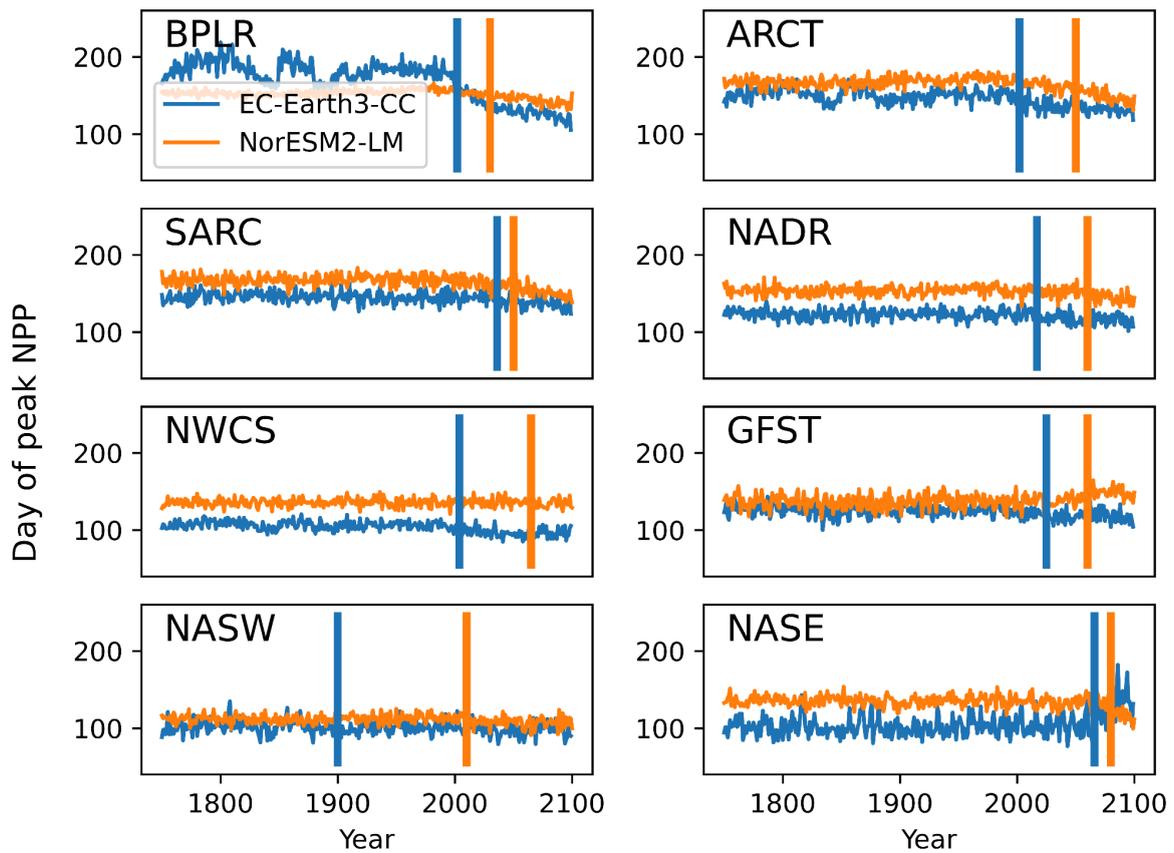


Figure S2: Day of peak NPP together with the largest change point for each province using the PELT search method.

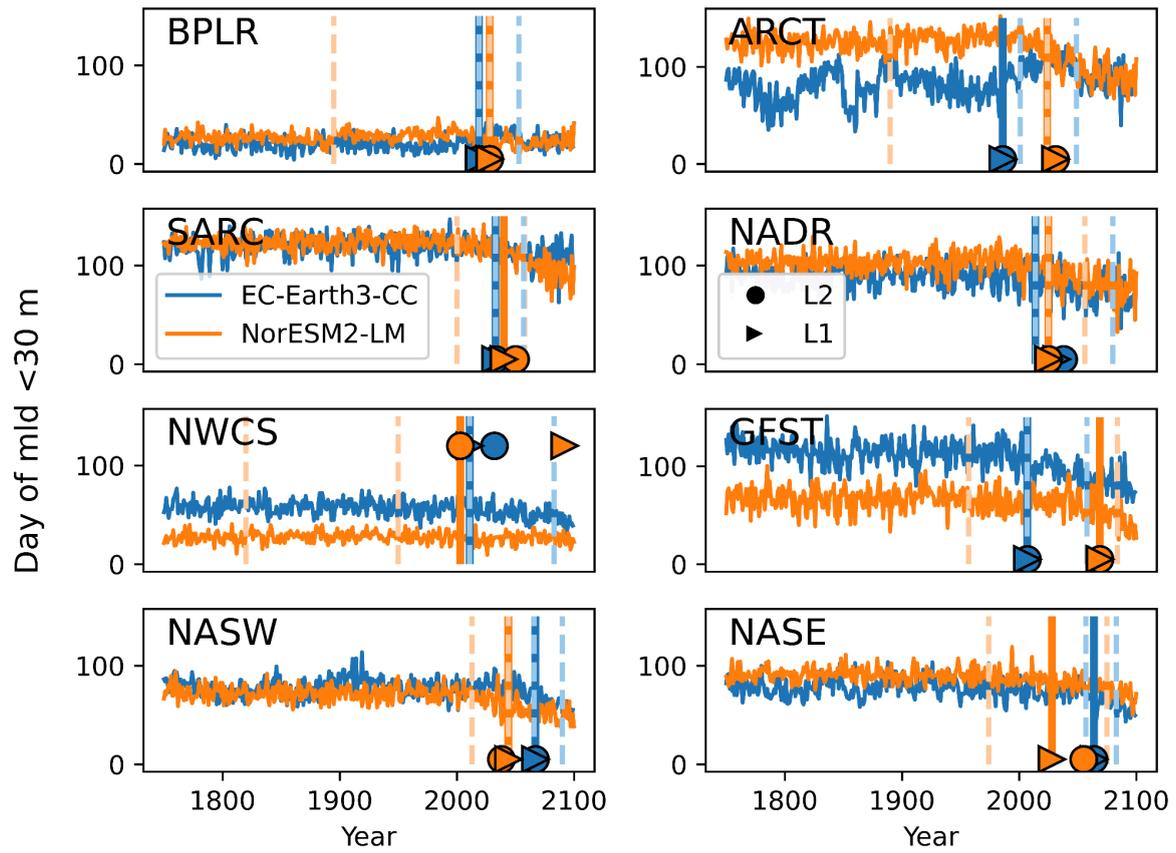


Figure S3: First day of the year when the mixed layer is **30 m** or less for EC-Earth3-CC (blue) and NorESM2-LM (orange). The major change points (calculated with a kernel based cost function) in the time-series are marked by the vertical lines. The largest change point is marked by solid lines and the two largest are marked with dashed lines. The centre of the circles represents the largest change point in the time series that corresponds to a change in the mean (L2) while the centre of the triangles represents the largest change point corresponding to a change in the median (L1).

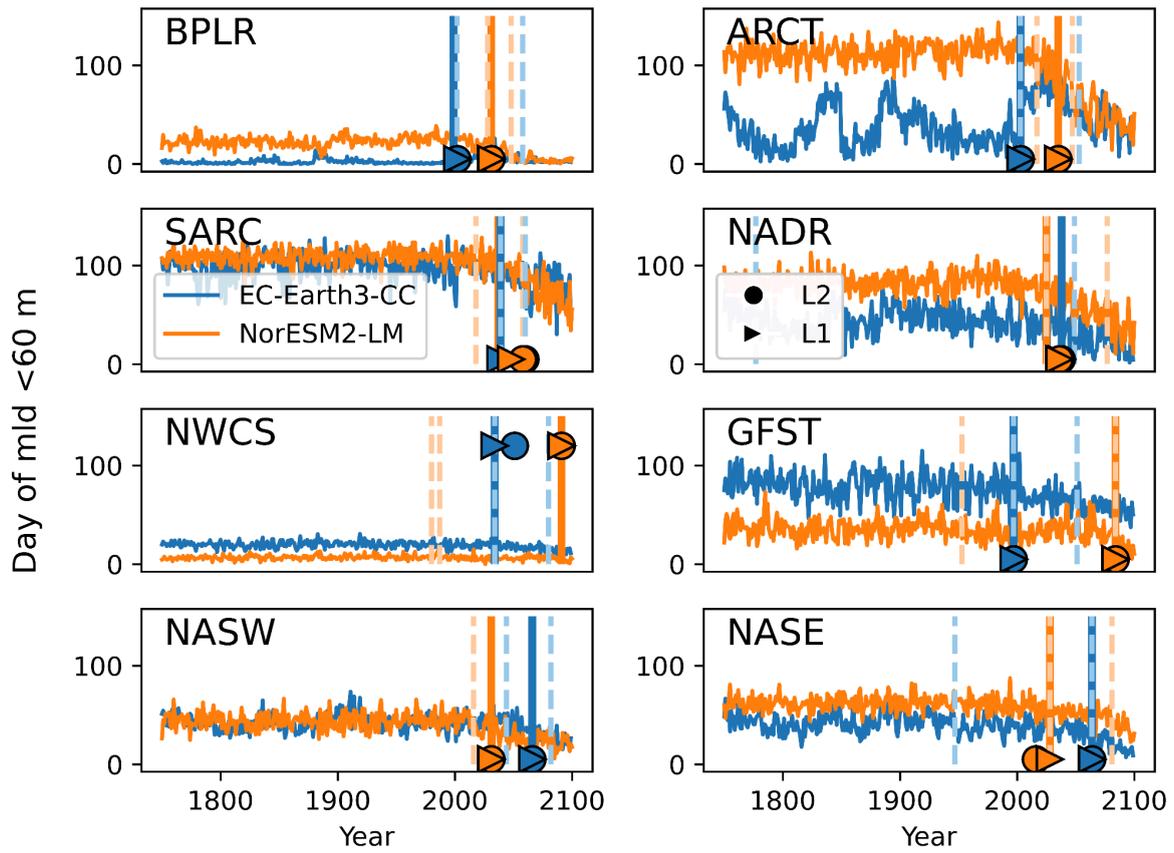


Figure S4: First day of the year when the mixed layer is **60 m** or less for EC-Earth3-CC (blue) and NorESM2-LM (orange). The major change points (calculated with a kernel based cost function) in the time-series are marked by the vertical lines. The largest change point is marked by solid lines and the two largest are marked with dashed lines. The centre of the circles represents the largest change point in the time series that corresponds to a change in the mean (L2) while the centre of the triangles represents the largest change point corresponding to a change in the median (L1).

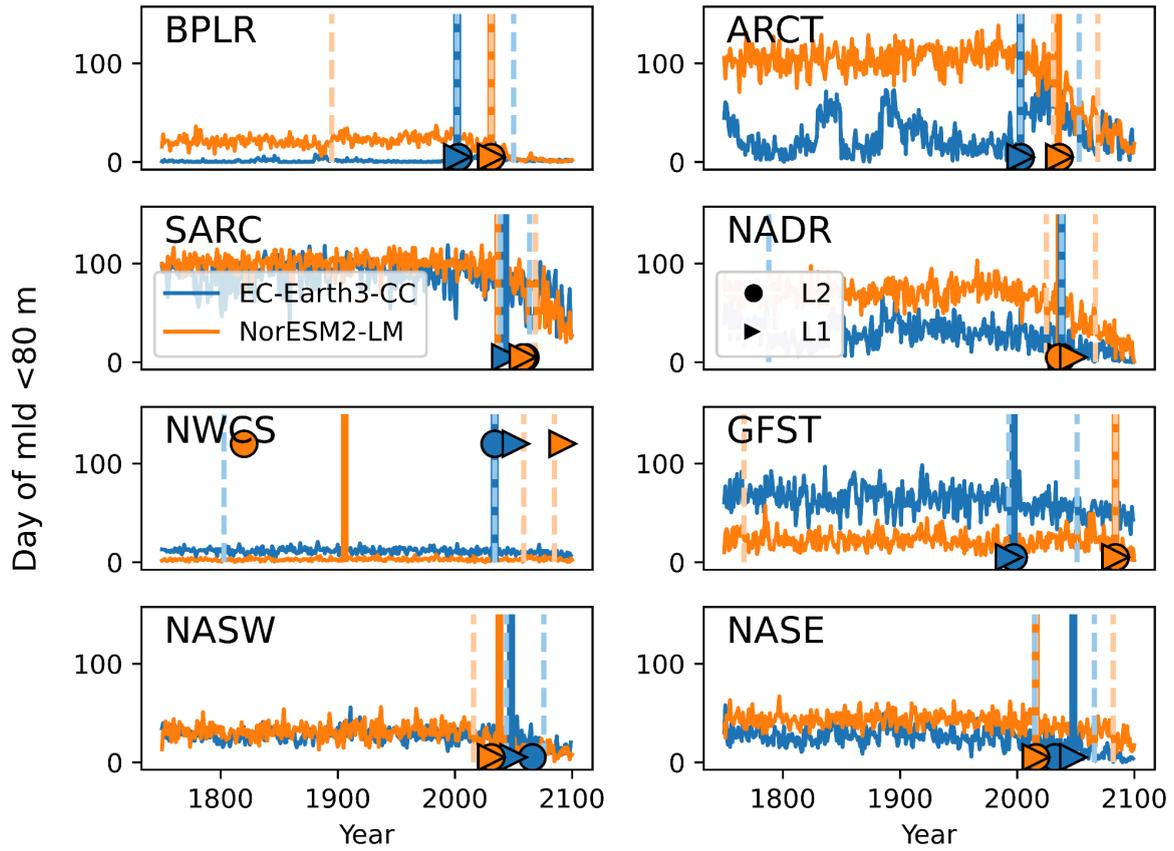


Figure S5: First day of the year when the mixed layer is **80 m** or less for EC-Earth3-CC (blue) and NorESM2-LM (orange). The major change points (calculated with a kernel based cost function) in the time-series are marked by the vertical lines. The largest change point is marked by solid lines and the two largest are marked with dashed lines. The centre of the circles represents the largest change point in the time series that corresponds to a change in the mean (L2) while the centre of the triangles represents the largest change point corresponding to a change in the median (L1).

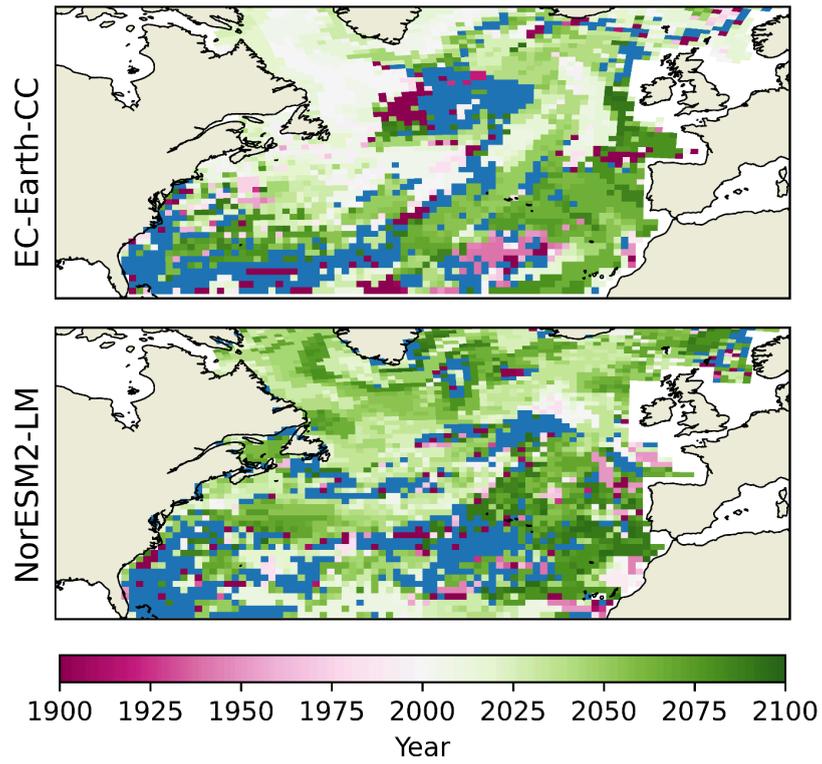


Figure. S6. The year of the largest change point in each grid space found by the PELT search method. The penalty was tuned so that only one change point would be found. Grid spaces where the penalty could not be tuned to pick up solely one change point is indicated in blue.

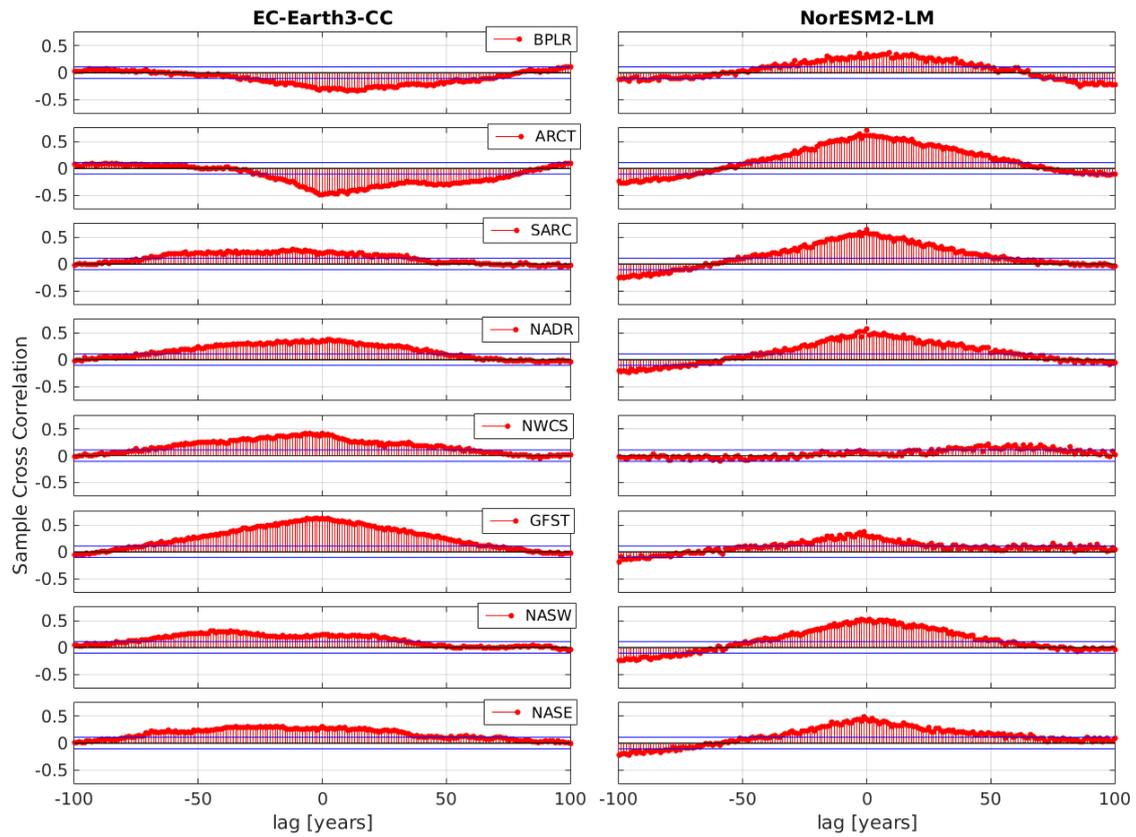


Figure. S7. Cross correlation between the day of peak NPP and the first day of mixed layer depth (MLD) shallower than or equal to **30 m**. Negative lag means that the day of peak NPP precedes the first day of MLD shallower than 40m, while the opposite holds for positive lag. The horizontal blue lines mark the 95% confidence bounds.

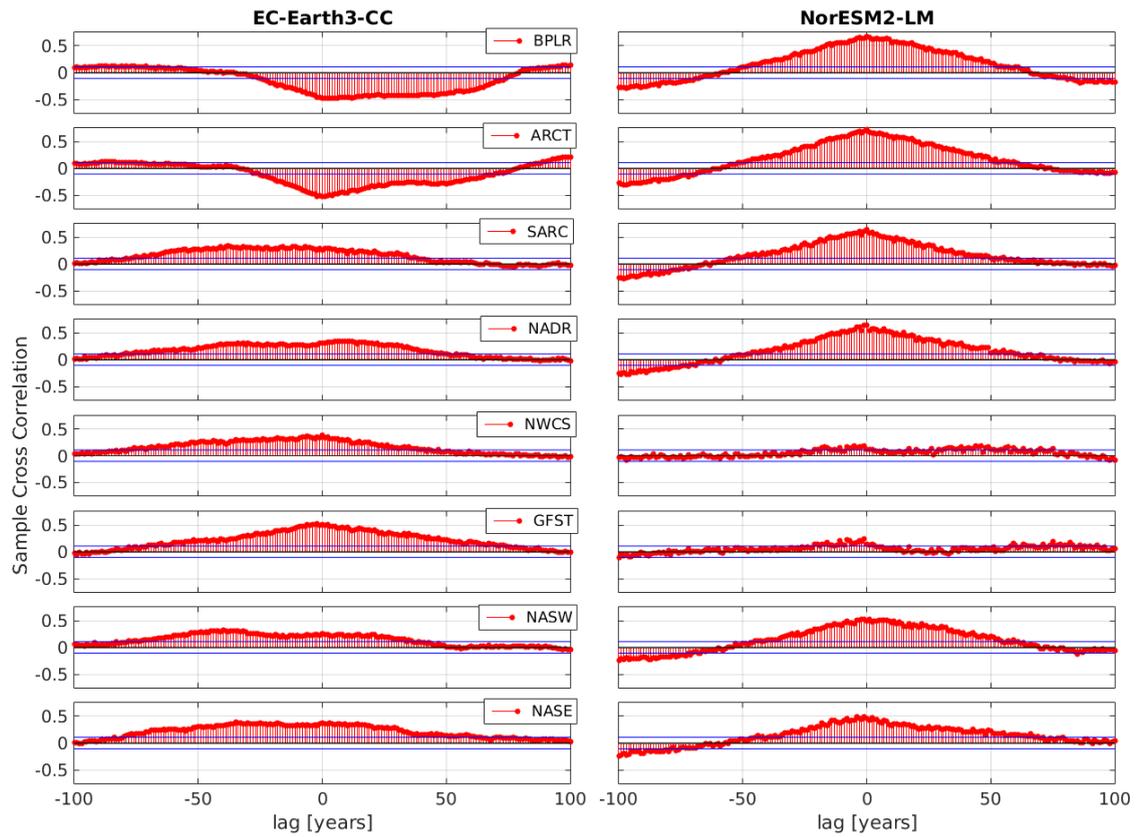


Figure. S8. Cross correlation between the day of peak NPP and the first day of mixed layer depth (MLD) shallower than or equal to **60 m**. Negative lag means that the day of peak NPP precedes the first day of MLD shallower than 40m, while the opposite holds for positive lag. The horizontal blue lines mark the 95% confidence bounds.

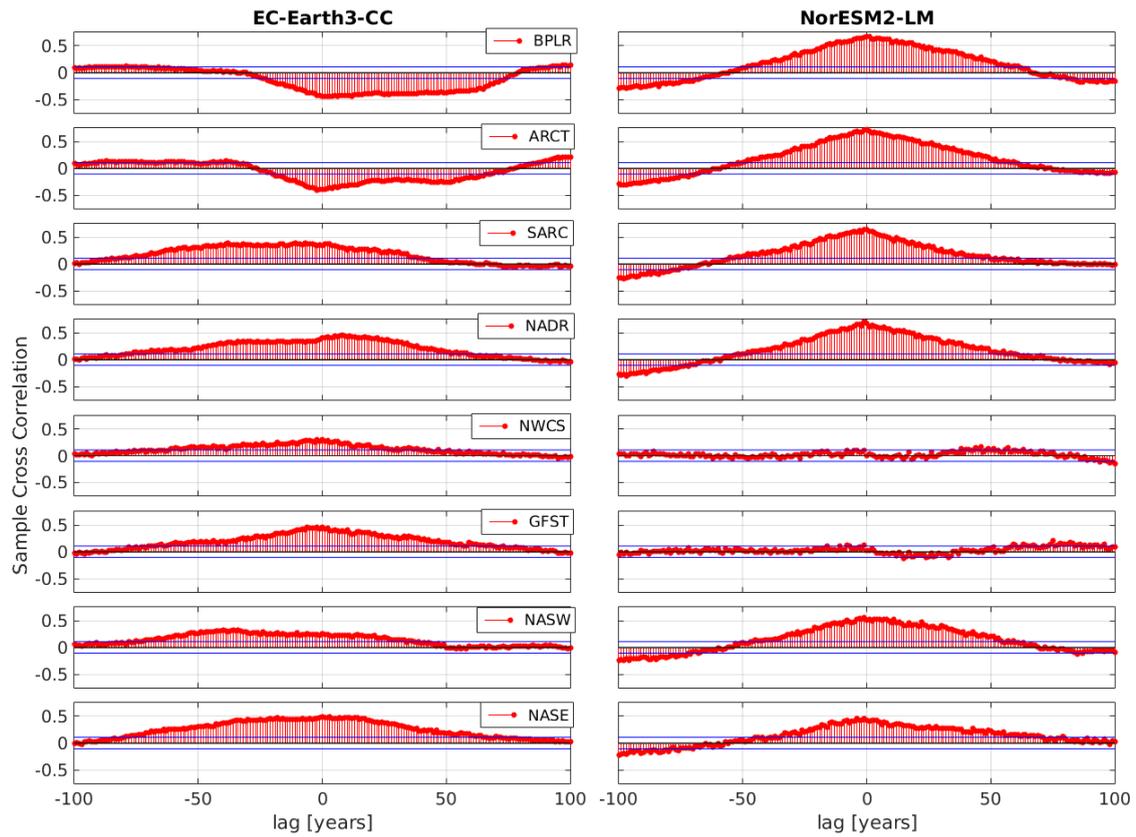


Figure. S9. Cross correlation between the day of peak NPP and the first day of mixed layer depth (MLD) shallower than or equal to **80 m**. Negative lag means that the day of peak NPP precedes the first day of MLD shallower than 40m, while the opposite holds for positive lag. The horizontal blue lines mark the 95% confidence bounds.