[JGR-Ocean]

Supporting Information for

Contrasted contribution of intraseasonal timescales to Surface Chlorophyll variations in a bloom and an oligotrophic regime

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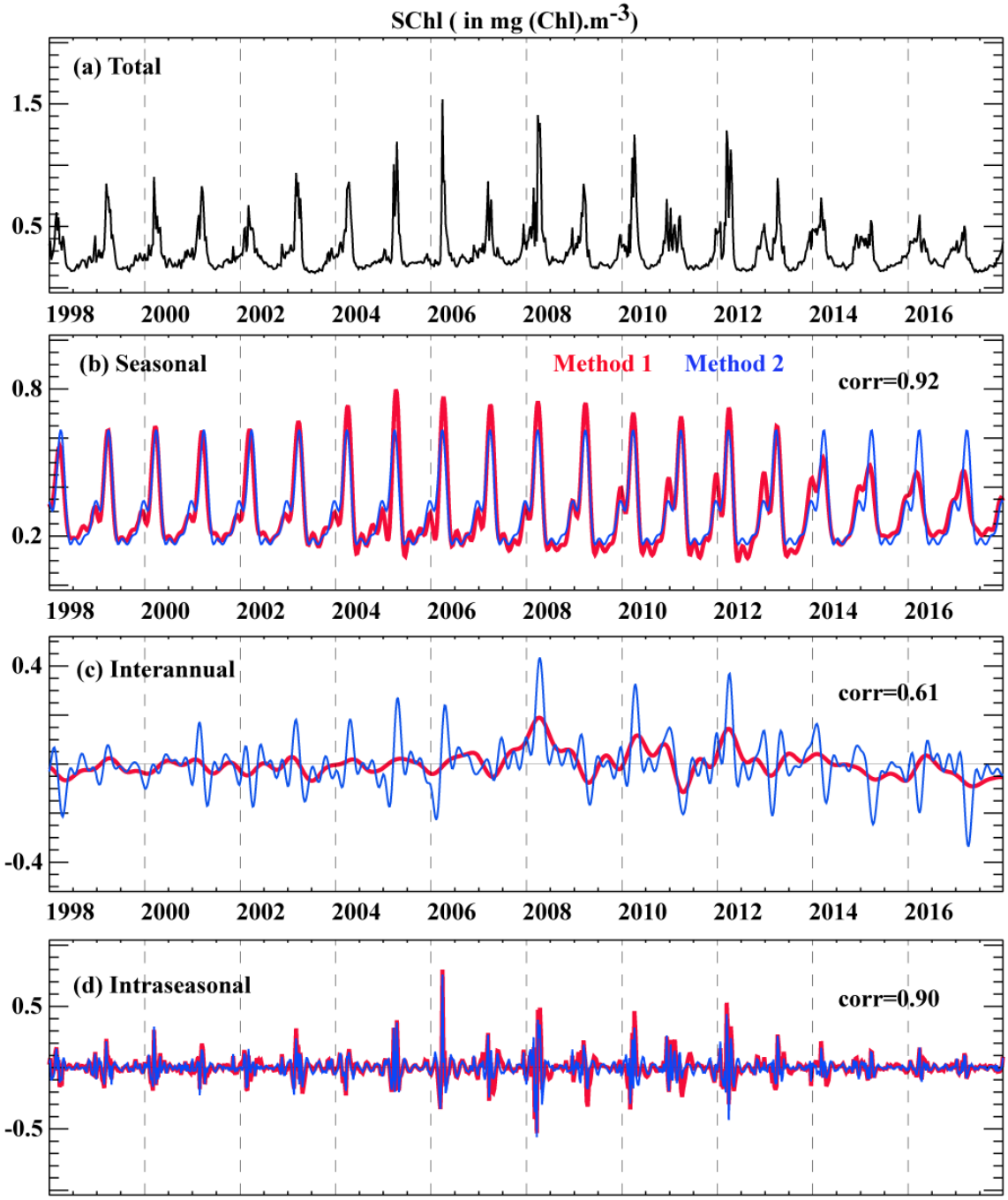

Figure S1. This figure complements Figure 2 and shows the entire time series**.** Decomposition of the ESA OC-CCI SChl time series at the 1°x1° BOUSSOLE mooring box into seasonal (b), interannual (c) and intraseasonal (d) components. Method 1 (red curves) is used in this paper and is characterized by a seasonal cycle that is allowed to vary from year to year. Method 2 (blue curves) is shown for comparison and uses a seasonally repeating seasonal cycle. The full time series is shown. Correlations between the blue and red curves are indicated on each panel.

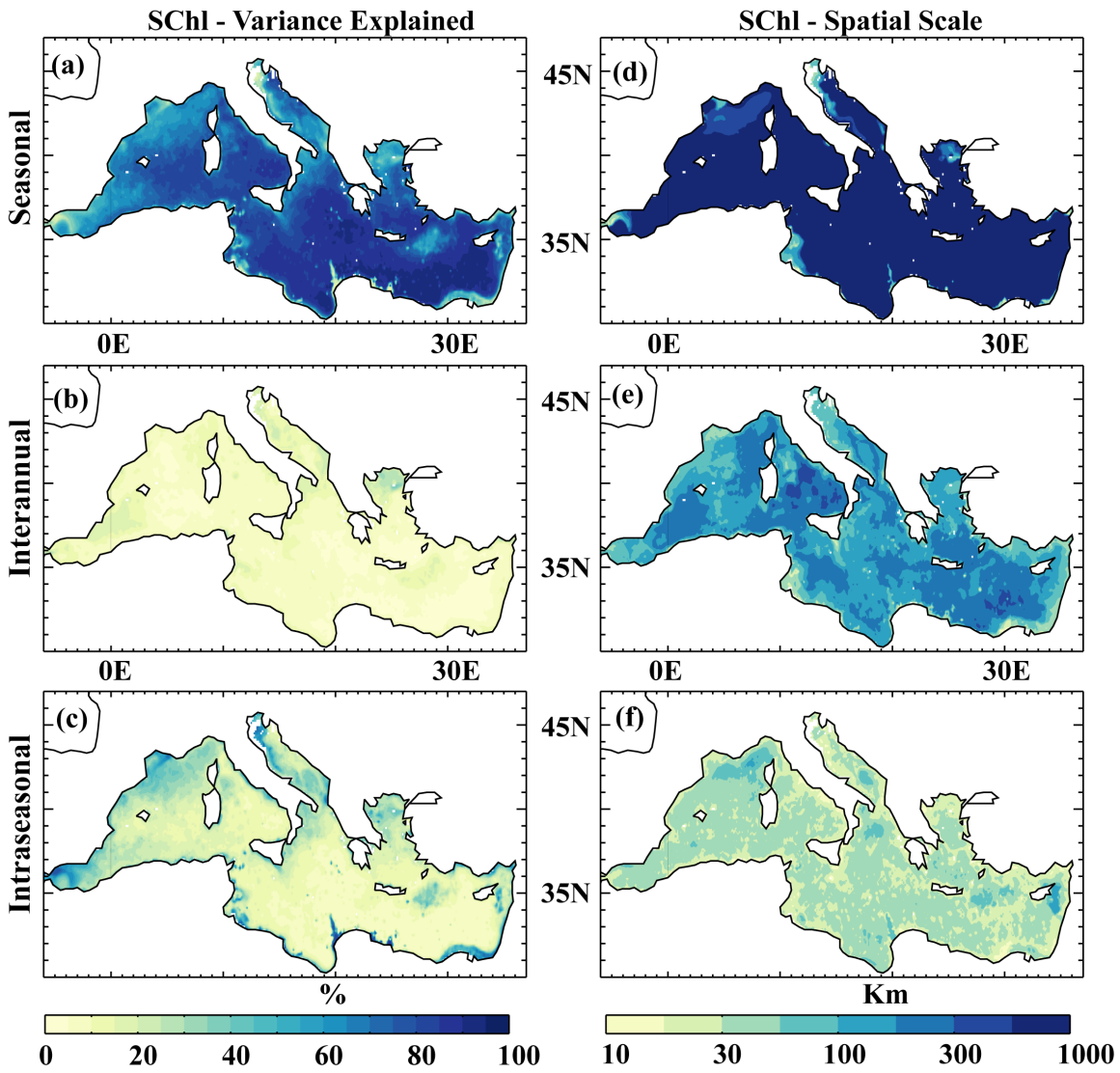

Figure S2. This figure repeats Figure 5 except that the different estimates are evaluated over a shorter period of time (1998-2012), corresponding to the time period where MxLD data were also available (1998-2012). **(**First Column) Percentage of the total SChl variance explained by its (a) seasonal, (b) interannual and (c) intraseasonal components. (Second Column) Spatial scales associated to (d) seasonal, (e) interannual and (f) intraseasonal SChl components.

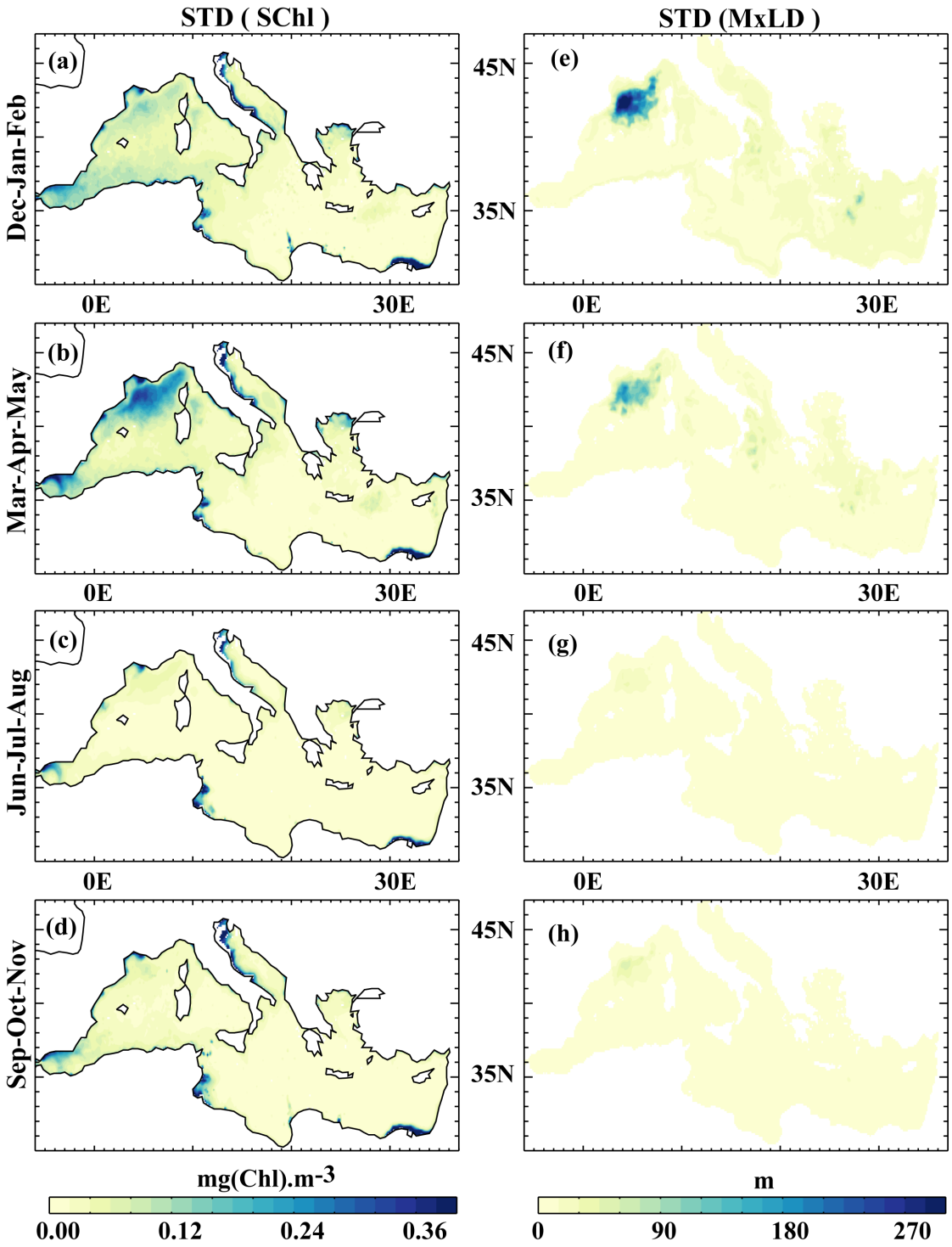

Figure S3. Standard deviation of intraseasonal variations of SChl and MxLD in (a, e) winter, (b, f) spring, (c, g) summer and (d, h) fall.

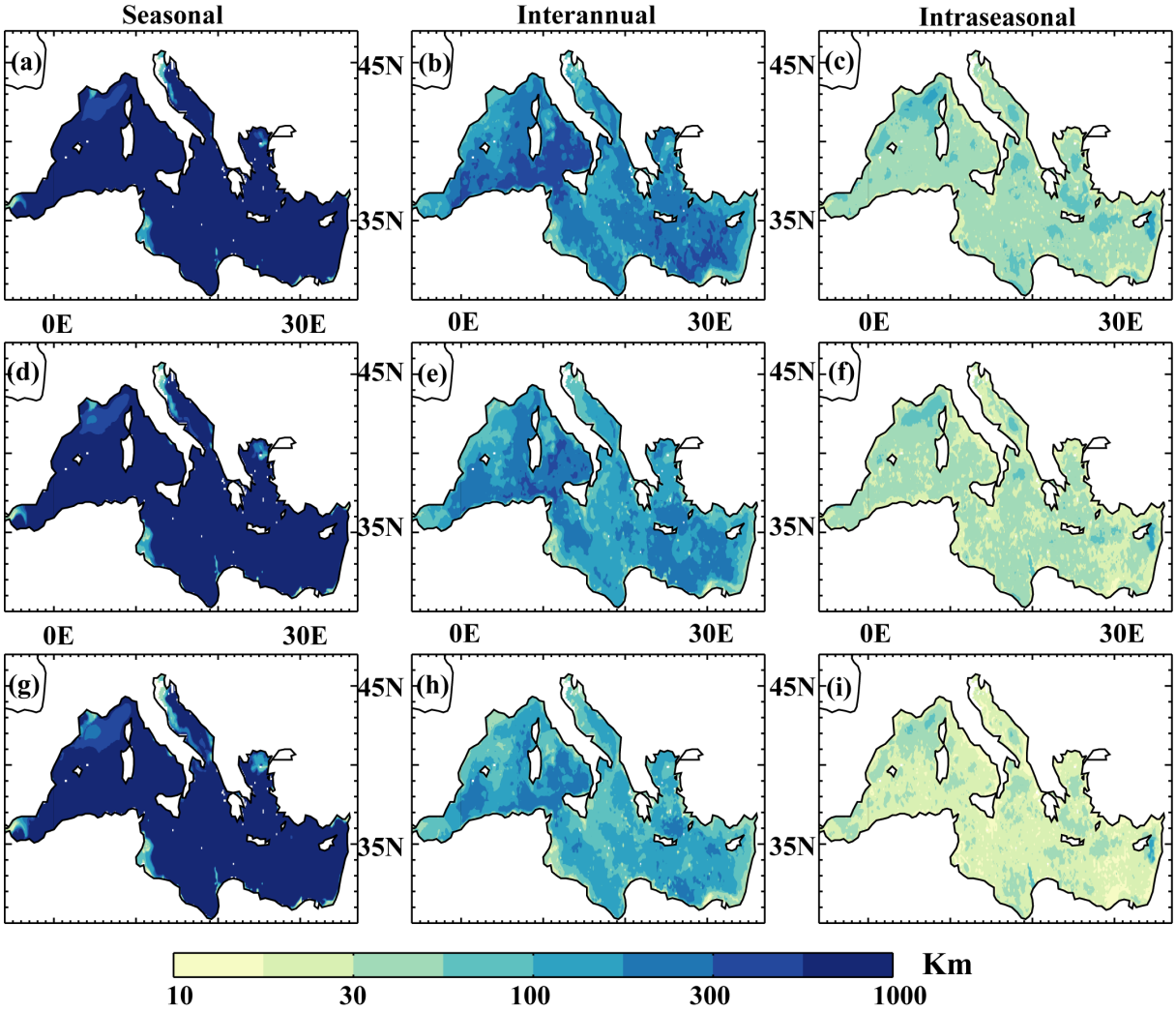

Figure S4. This figure shows the sensitivity of the SChl spatial scales to the choice of the cross-correlation threshold. Spatial scales associated to (a, d, g) seasonal, (b, e, h) interannual and (c, f, i) intraseasonal timescales for SChl using cross-correlation threshold of (top row) 0.75, (middle row) 0.8 and (bottom row) 0.85.

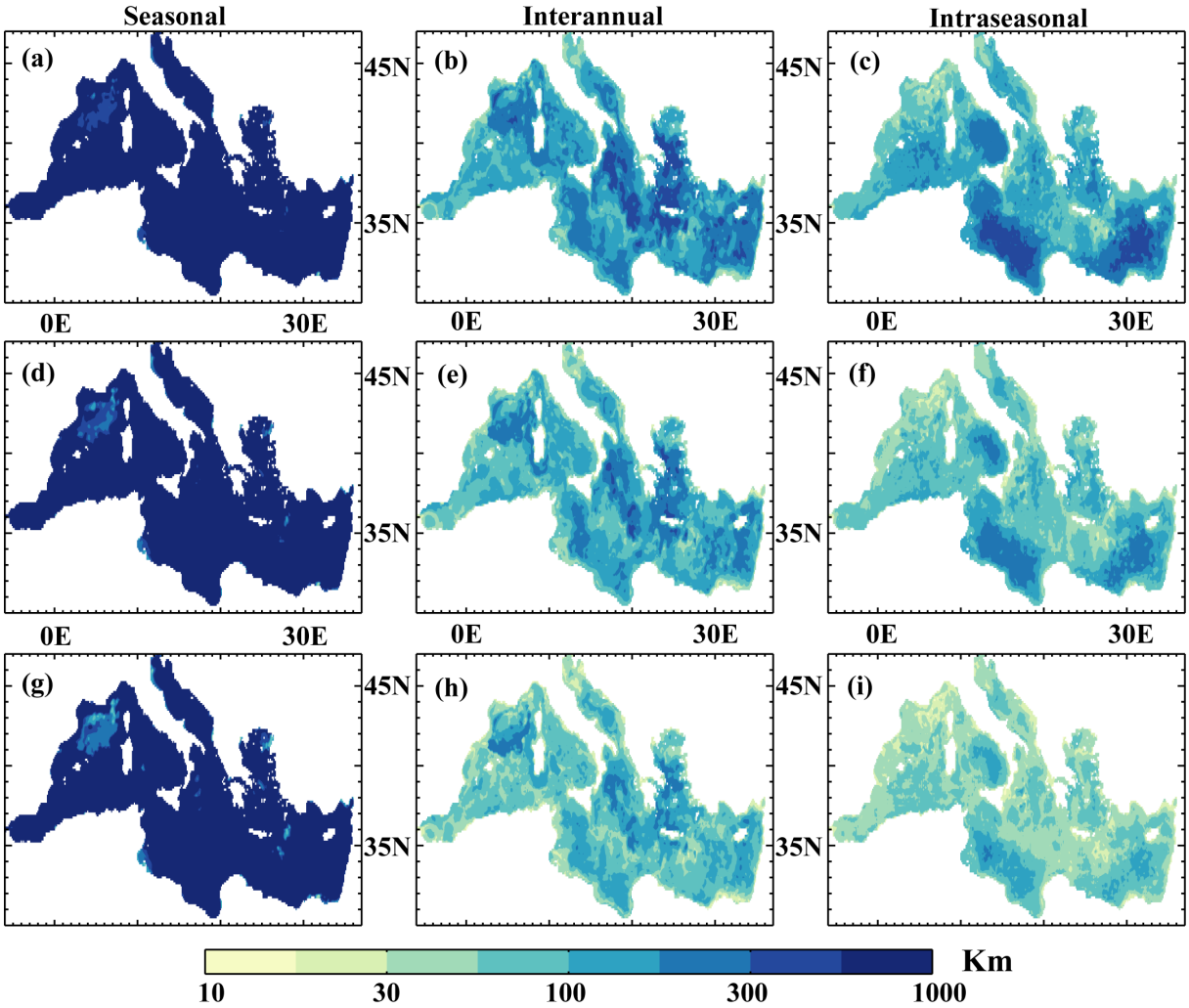

Figure S5. This figure shows the sensitivity of the MxLD spatial scales to the choice of the cross-correlation threshold. Spatial scales associated to (a, d, g) seasonal, (b, e, h) interannual and (c, f, i) intraseasonal timescales for MxLD using cross-correlation threshold of (top row) 0.75, (middle row) 0.8 and (bottom row) 0.85.

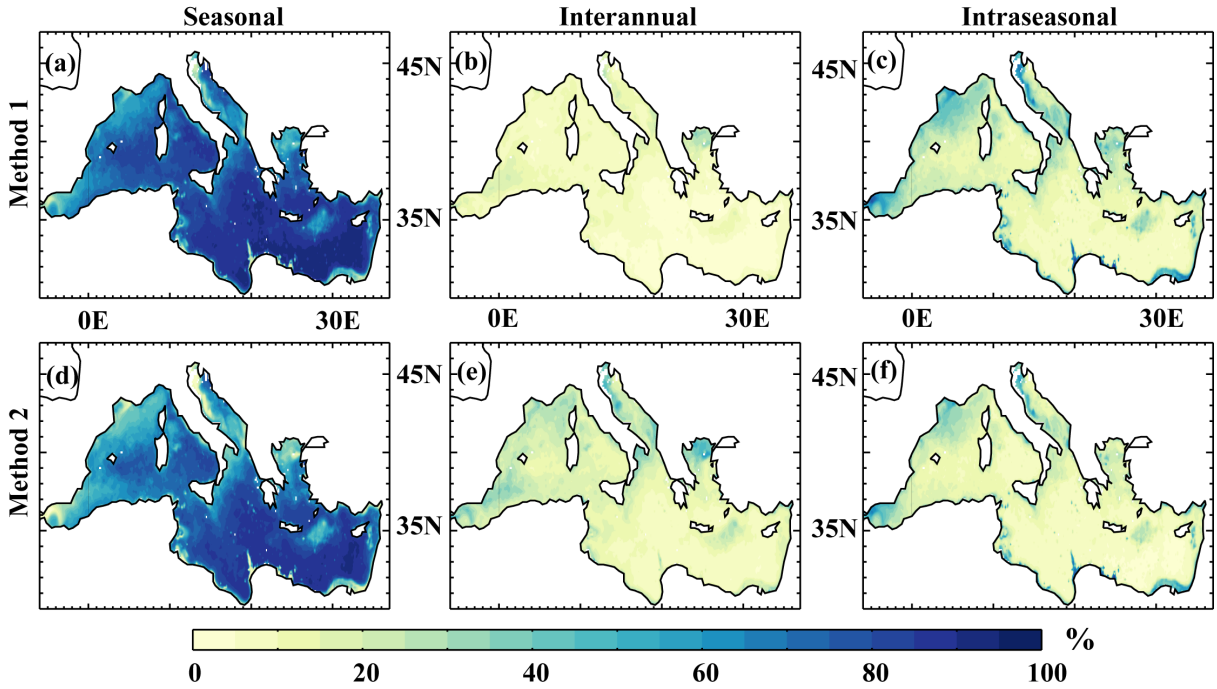

Figure S6. This figure shows the sensitivity of the SChl variance partitioning to the choice of the temporal decomposition method. Percentage of the total SChl variance explained by the (a, d) seasonal, (b, e) interannual and (c, f) intraseasonal components based on the temporal decomposition (top row) method 1 and (bottom row) method 2.