Ocean Science

Supplement of

Circulation of the European northwest shelf: a Lagrangian perspective

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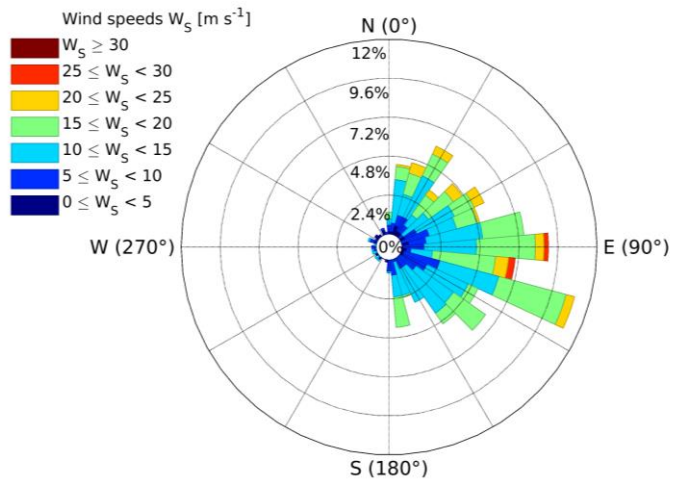
Fig. S1. Wind rose of January 2015 obtained from the model forcing at 53.00° N, 14.94° W. The position of analysis is marked with a black circle in Fig. S3.
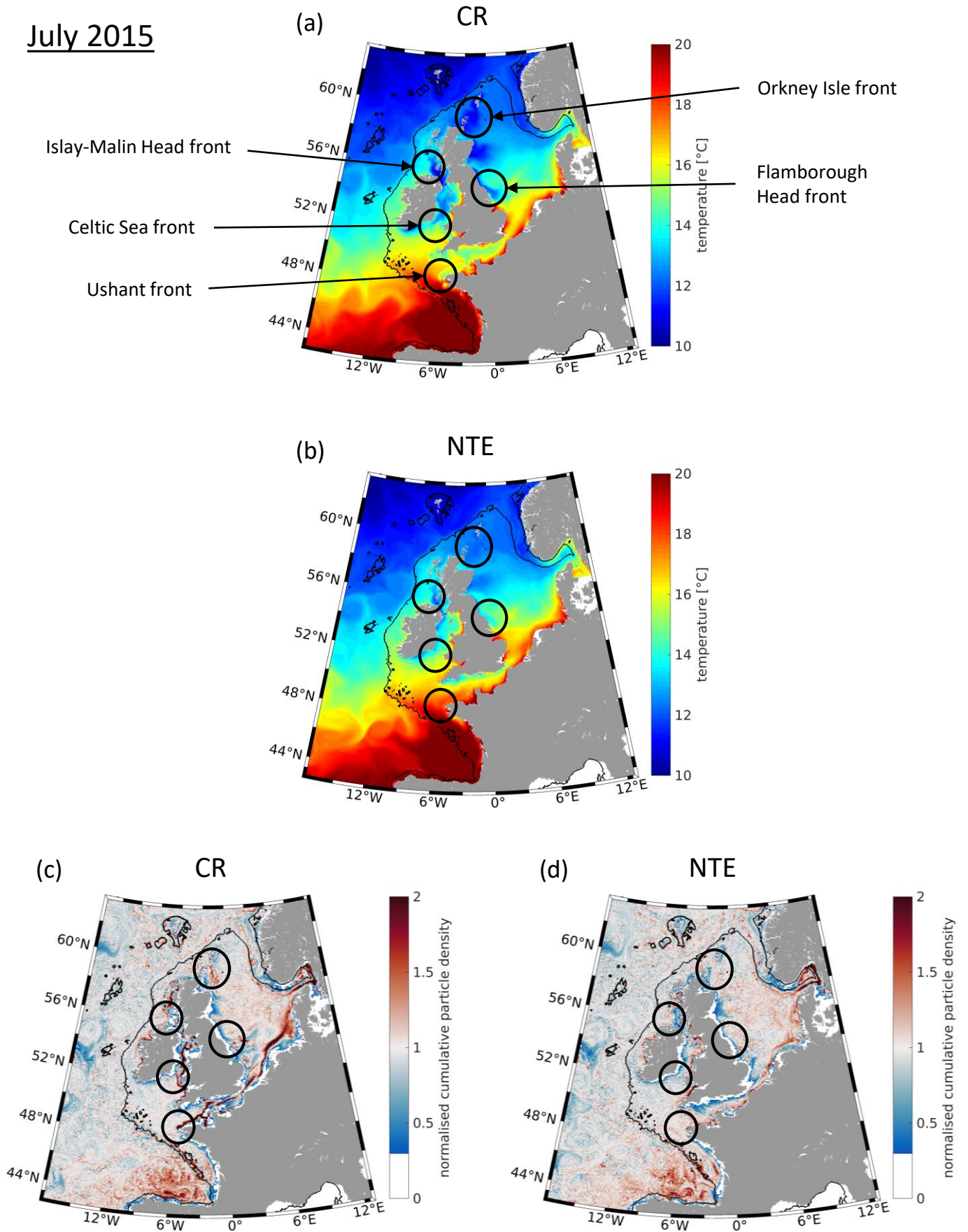
Fig. S2. Typical tidal mixing fronts (black circles) shown in (a) as July 2015 averaged SST distribution in the control run (CR, see Table 1). The respective January SST is shown in Fig. 2e. For comparison, the black circles are repeated in (b) to (d). The result of the nontidal experiment (NTE) for the same period is shown in (b). NCPD for July 2015 in (c) the CR and (d) the NTE.
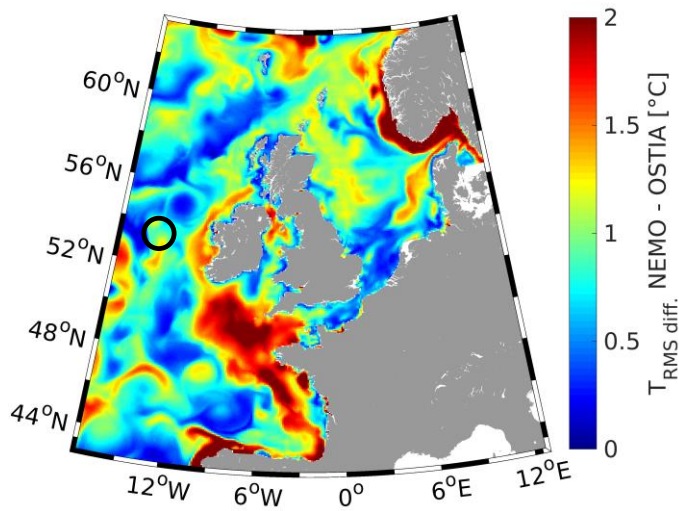
Fig. S3. Root mean square difference of model SST of the control run (CR, see Table 1) and OSTIA data for January 2015. The black circle denotes the position of wind analysis shown in Fig. S1.
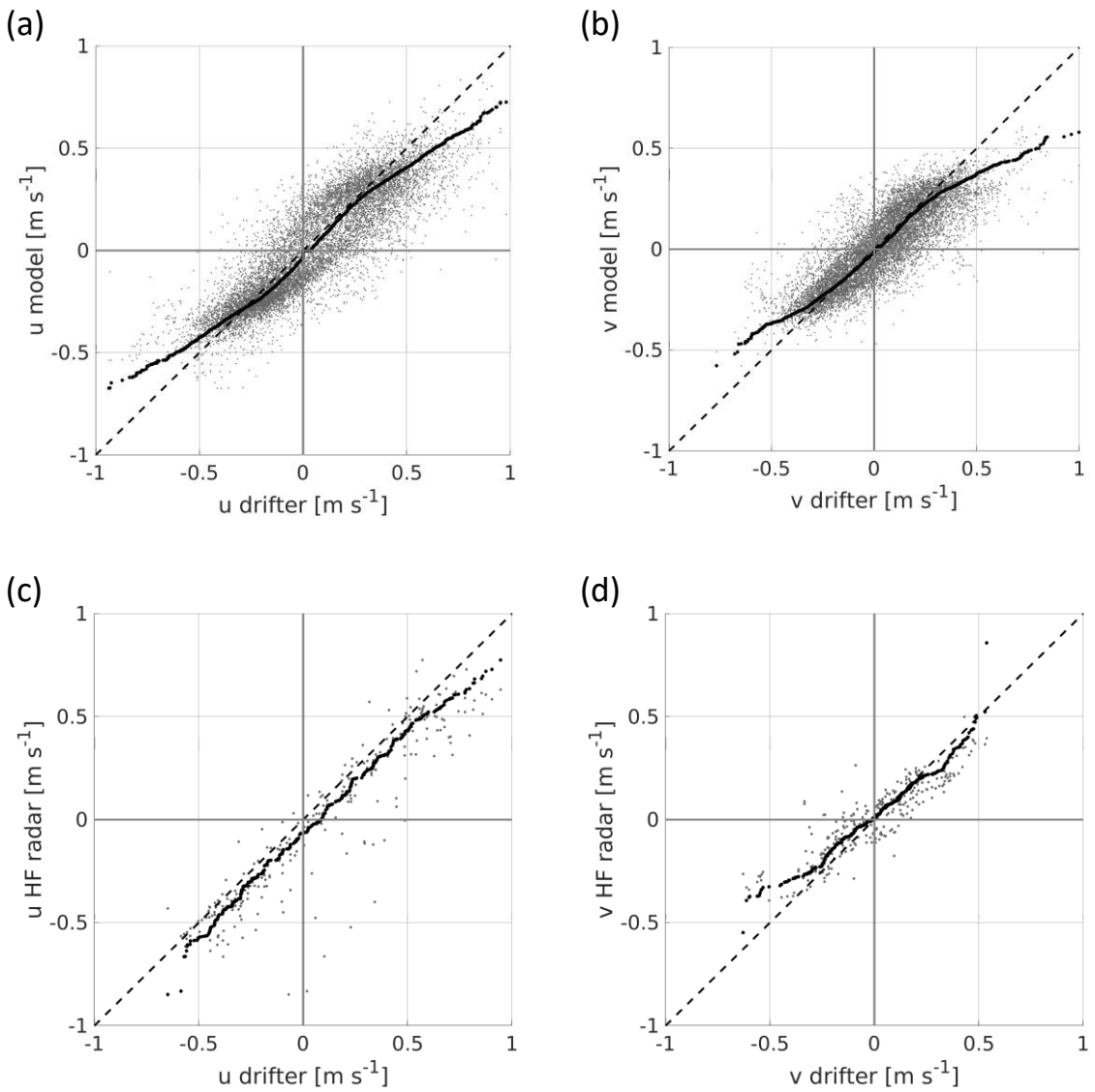
Fig. S4. Scatter plots of (a, b) GPS drifter (May to July 2015) and control run (CR, see Table 1) surface velocities as well as (c, d) HF radar velocities of their (a, c) u and (b, d) v velocity components. Model and HF radar velocities were trilinearly (space and time) interpolated to drifter positions. The dashed line is the diagonal and denotes the optimal dot positions. The black dotted line is the quantile-quantile plot (qq-plot). The amount of available HF radar is less than the drifter data; thus these dots are enlarged. Statistics of each plot are shown in Table 2.
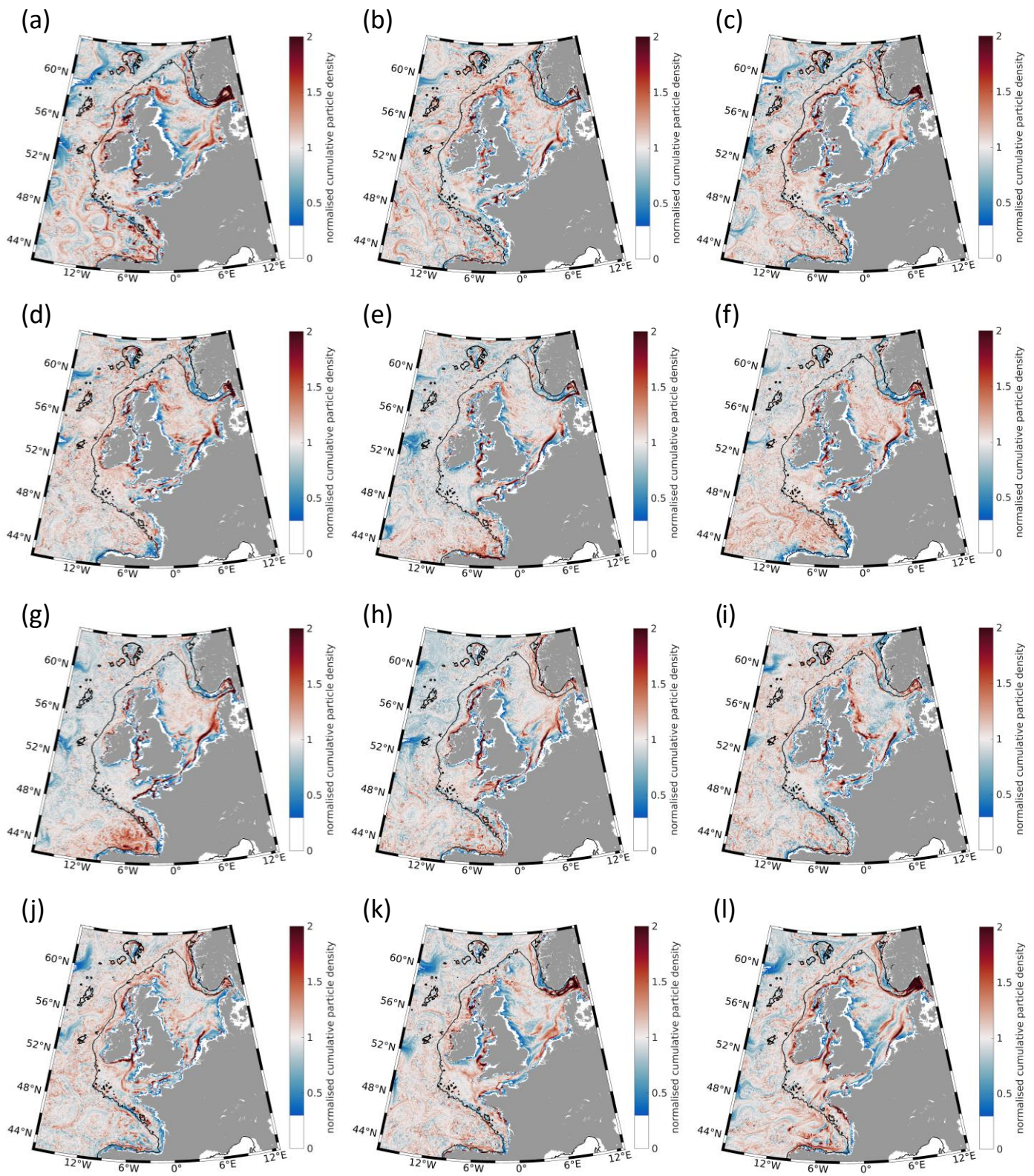
Fig. S5. Tendency of accumulation of surface released particles in the control run (CR, see Table 1) shown as NCPD for every month in 2015; (a) January to (l) December. Note the variability between the single months and compare with its mean in Fig. 5c.

Fig. S6. Tendency of accumulation of bottom released particles in the control run (CR, see Table 1) shown as NCPD for every month in 2015; (a) January to (l) December. Note the variability between the single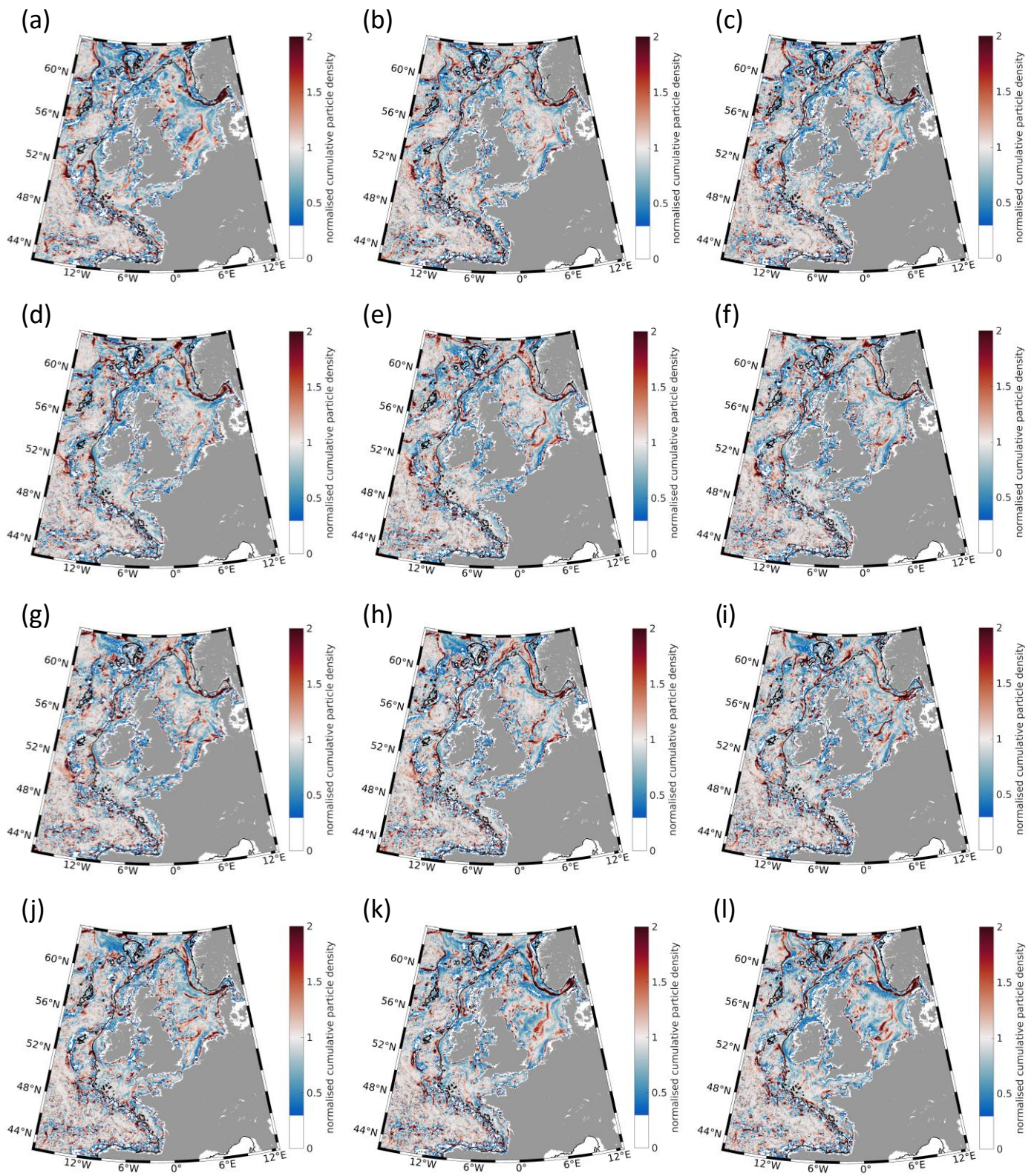 months and compare with its mean in Fig. 5d.