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*Supplement of*

## **Variations in $N_{\text{cn}}$ and $N_{\text{ccn}}$ over marginal seas in China related to marine traffic emissions, new particle formation and aerosol aging**

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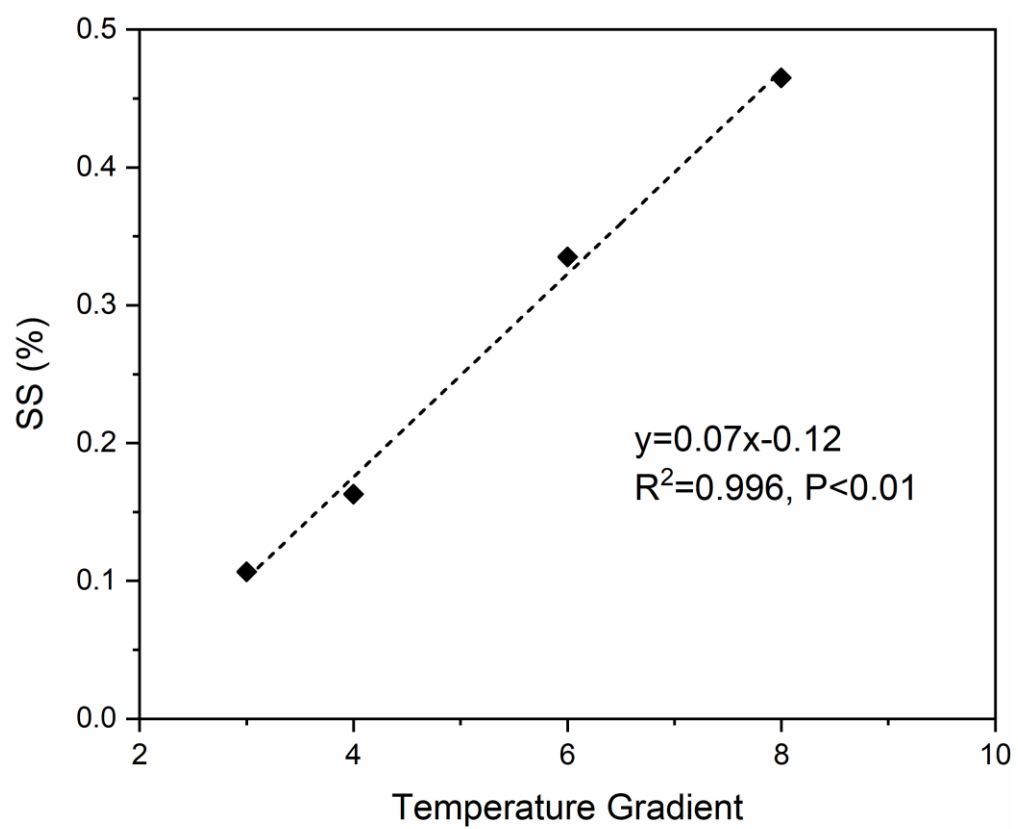


Fig S1. SS (%) versus Temperature gradient in calibrating DMT-CCNC at 500 V ccm and 1000 mb (The calibration was conducted by the vendor of DMT-CCNC in China as a commercial service purchased).

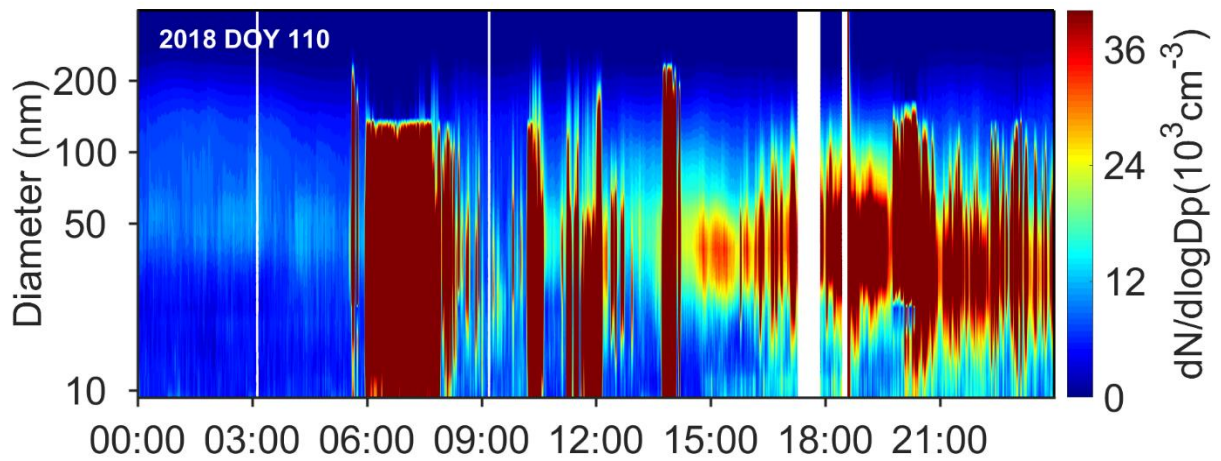


Fig. S2 The contour plot of particle number size distribution on April 20 2018 (DOY 110), with the dark red areas in general indicating the signal of ship emission

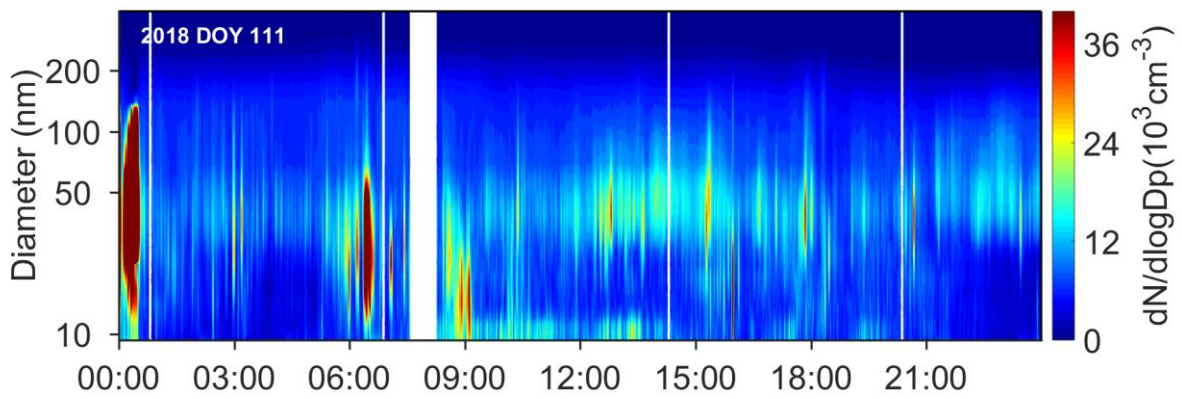


Fig. S3 The same as Fig. S2 but for April 21 2018 (DOY 111)

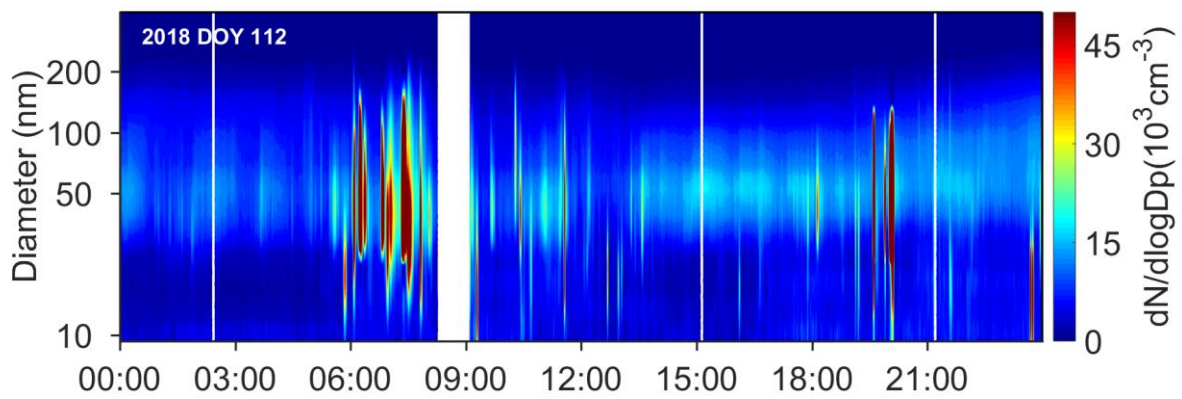


Fig. S4 The same as Fig. S2 but for April 22 2018 (DOY 112)

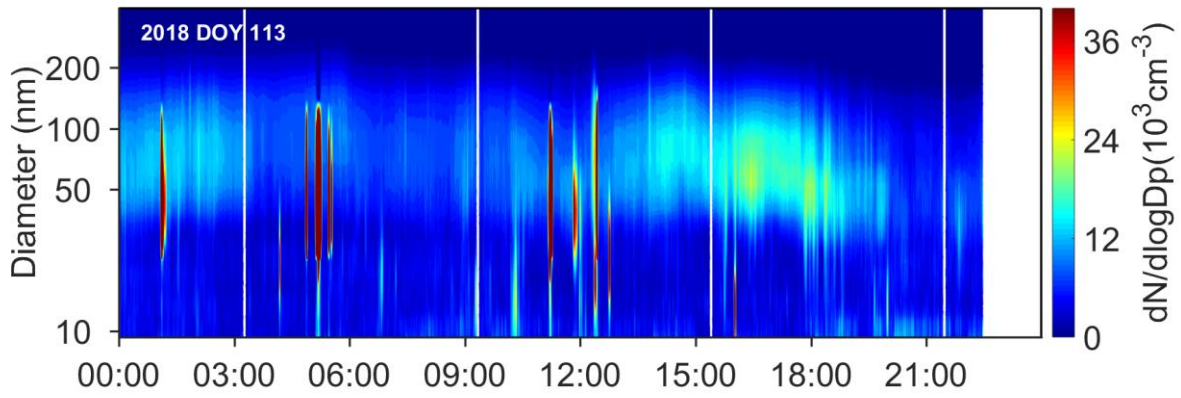


Fig. S5 The same as Fig. S2 but for April 23 2018 (DOY 113)

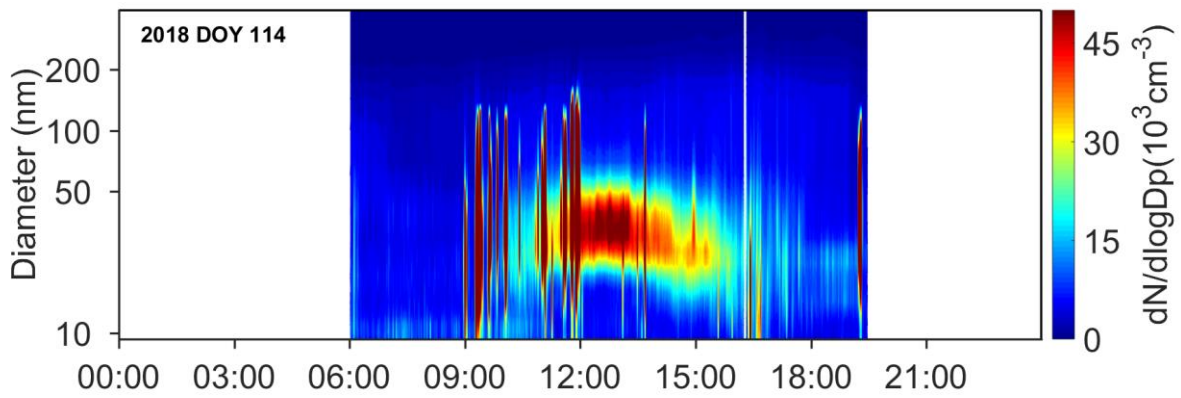


Fig. S6 The same as Fig. S2 but for April 24 2018 (DOY 114)

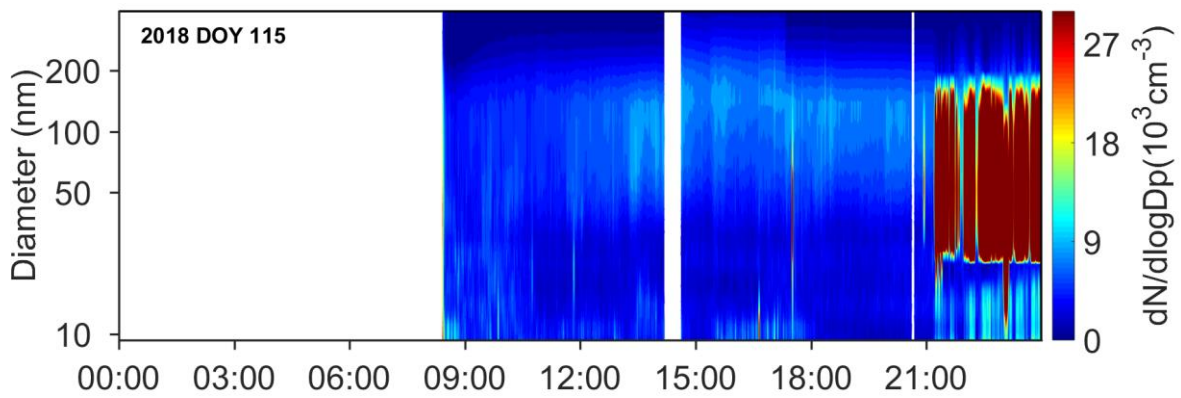


Fig. S7 The same as Fig. S2 but for April 25 2018 (DOY 115)

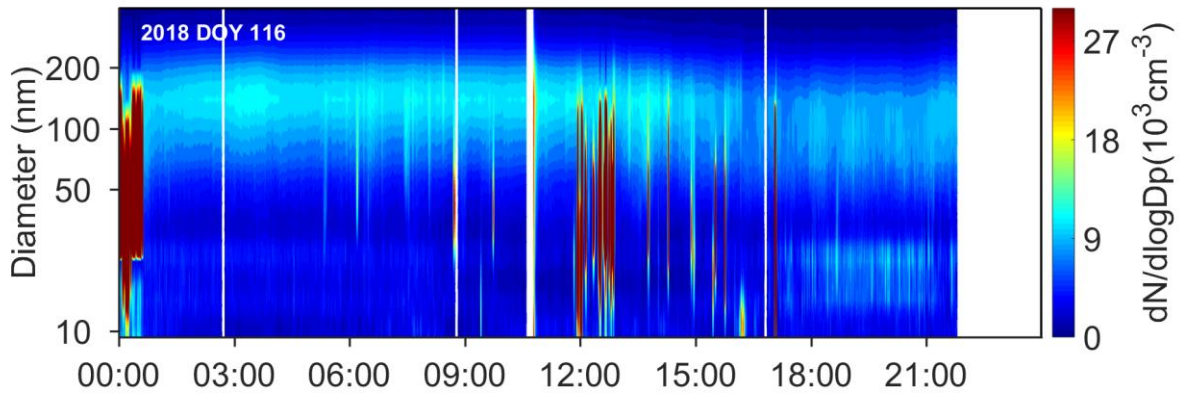


Fig. S8 The same as Fig. S2 but for April 26 2018 (DOY 116)

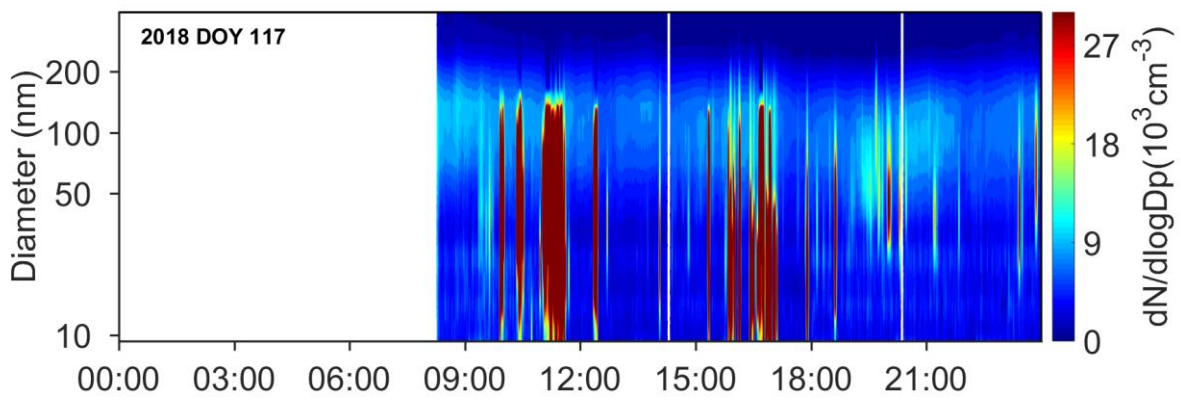


Fig. S9 The same as Fig. S2 but for April 27 2018 (DOY 117)

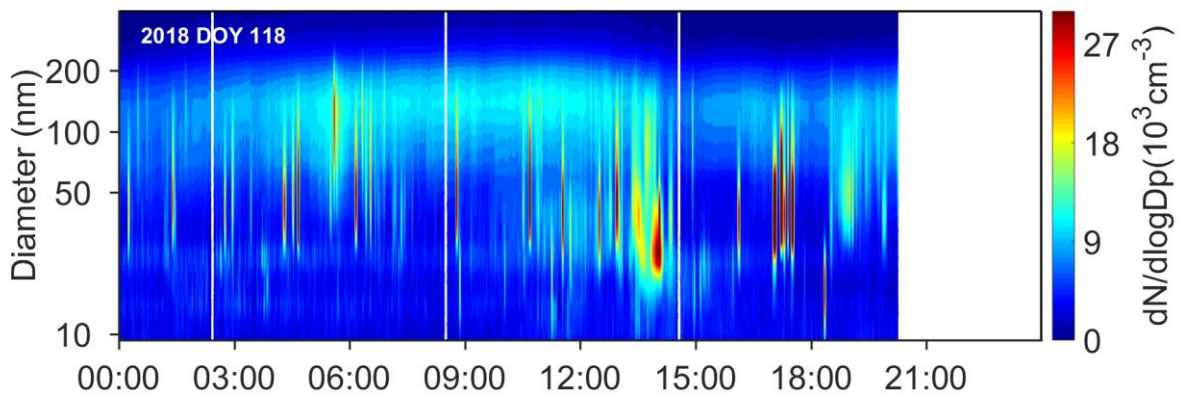


Fig. S10 The same as Fig. S2 but for April 28 2018 (DOY 118)

NOAA HYSPLIT MODEL  
 Backward trajectories ending at 0000 UTC 22 Apr 18  
 GFSG Meteorological Data

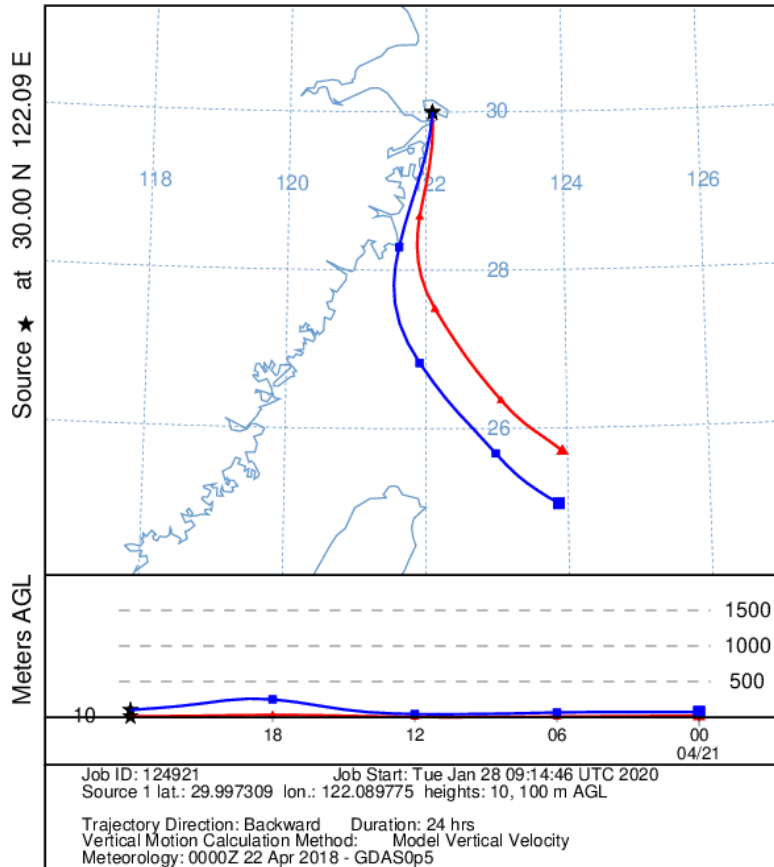


Fig. S11 The NOAA's HYSPLIT back trajectory direction in the past 24 hours (April 22 (DOY 112) 2018)

NOAA HYSPLIT MODEL  
 Backward trajectories ending at 0000 UTC 24 Apr 18  
 GFSG Meteorological Data

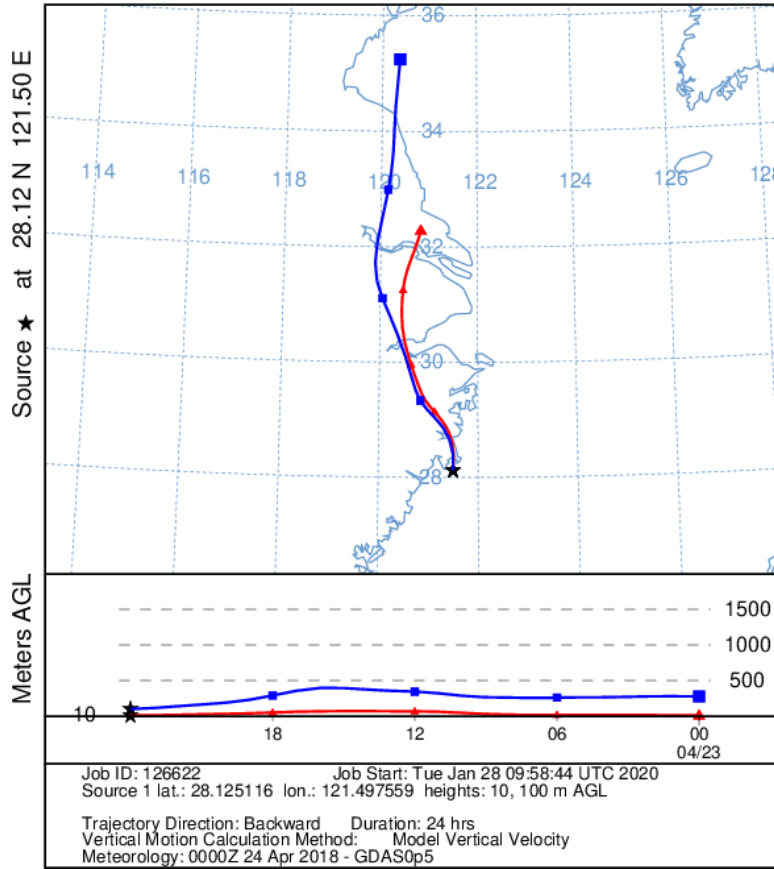


Fig. S12 The same as Fig. S10 but for April 24 (DOY 114) 2018

NOAA HYSPLIT MODEL  
 Backward trajectories ending at 0000 UTC 26 Apr 18  
 GFSG Meteorological Data

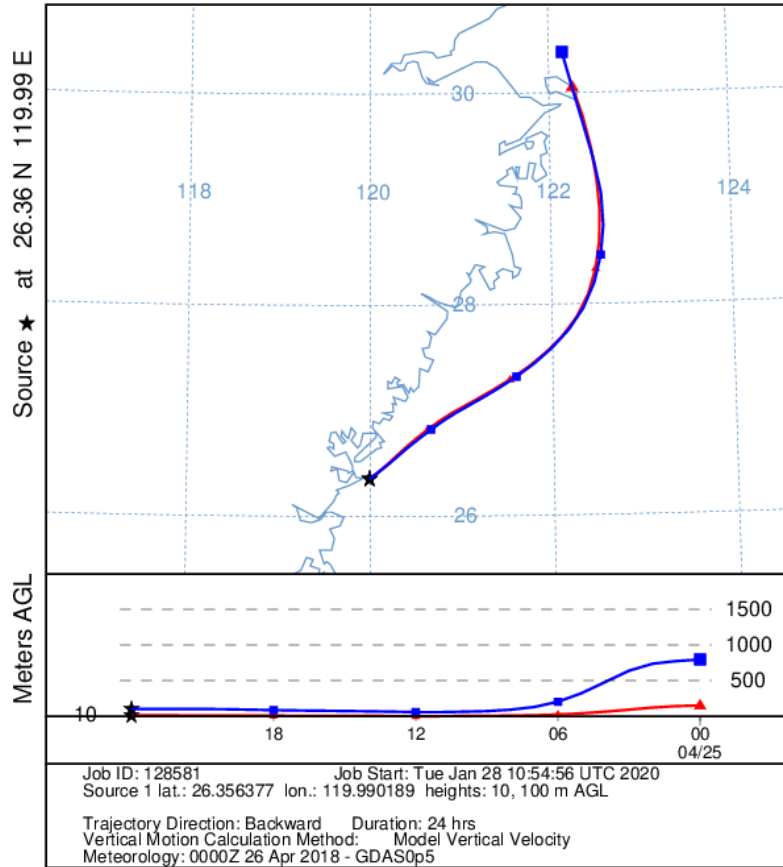


Fig. S13 The same as Fig. S10 but for April 26 (DOY 116) 2018



NOAA HYSPLIT MODEL  
 Backward trajectories ending at 0000 UTC 28 Apr 18  
 GFSG Meteorological Data

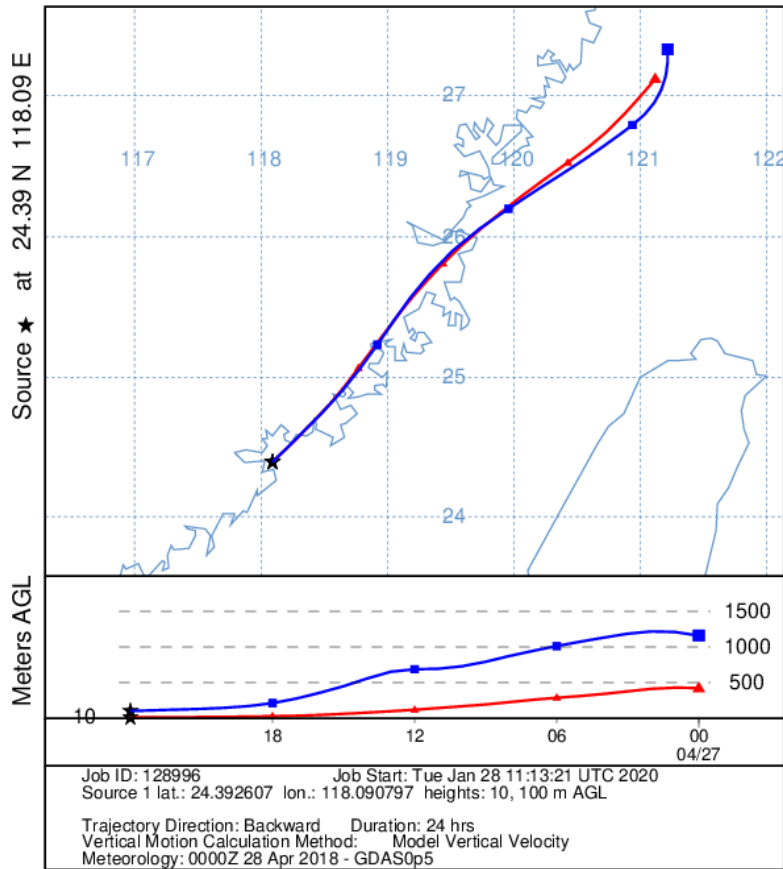


Fig. S14 The same as Fig. S10 but for April 28 (DOY 118) 2018