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The applications of FENGYUN satellite data in Marine Meteorology

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Meteorological satellite is the most important measure to monitor the ocean weather. Based on FENGYUN meteorological satellite data, NSMC/CMA has developed a series of marine remote sensing products, such as sea fog, sea convection, ocean precipitation, sea surface wind, sea surface temperature and Upper Tropospheric Wind Field Analysis etc.

In order to adapt to the demands of analyzing marine weather system and improve the accuracy of remote sensing products, NSMC made more improvement on the product algorithms. For example, for the sea fog remote sensing application, the detection results of day and night sea fog are more coincident by the dynamic threshold method. For the precipitation retrieval, it is very effective to promote the accuracy of sea surface precipitation using FY-3/MWRI precipitation product to correct the FY-2 precipitation result. For the sea surface wind retrieval, depending on multi-channel fusion method, it was solved that retrieved wind velocity of the strong wind area around tropical cyclones was lower. All of these improved algorithms of marine remote sensing application have been operationalized and applied by meteorological divisions in the coastal areas through the platform of SWAP. In this paper, the basic algorithms, accuracy and application of FENGYUN marine remote sensing products are introduced and future improving plan is also proposed.