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# The mission, technical performance status and application demonstration of China France ocean satellite

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## Résumé

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The CFOSAT is a joint experimental and international cooperative satellite of the Chinese (CNSA) and French (CNES) space agencies which was launched on 29 October 2018 (00:43 UTC) on a Long March 2C vehicle of China from JSLC (Jiuquan Satellite Launch Center). It is flying in a polar orbit at an altitude of 519 km.

The primary objective of CFOSAT is to monitor the wind and waves at the ocean surface on a global scale in order to improve the wind and wave forecast for marine meteorology (including severe events) and disaster monitoring, the ocean dynamics modeling and prediction, our knowledge of climate variability, fundamental knowledge on surface processes linked to wind and waves.

It is equipped two new concept instruments which obtain the information of sea surface wind field, wave spectrum simultaneous and polar sea ice. The SCAT instrument which is a rotating fan-beam scatter-meter operated in Ku-band microwave wave frequency and developed by National Space Science Center, Chinese Academy of Sciences, and SWIM (Surface Waves Investigation and Monitoring) also operated in Ku-Band radar with a six near-nadir scanning beam geometry which was built by Thales Alenia Space Industry (TAS) under a CNES contract. The swaths of CSCAT and SWIM are 1000 km and 180 km, such that they can achieve a global coverage of wind and wave measurements in 3 days and 13 days,

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\*Intervenant

respectively.

Both sides established ground application system include ground stations, calibration and validation, satellite operational control and maintaining, data processing, data archiving and deliver sub-system. The satellite platform, both innovative instruments and ground segment work well in 24 hour every day and a lot of good quality data product has also been used in typhoon monitoring and polar research with HY-2B satellite and Metop-A/B satellite data product.

The wechat applet program named "ocean satellite remote sensing living show" was developed, Each people can quickly obtain and display the sea surface wind field products of China France ocean satellite, ocean-2 satellite and Metop-A/B satellite, as well as the sea surface wind field products of multiple satellites integration. The public, sea related enterprises and government departments can quickly obtain the sea surface wind field products of the areas of concern through our wechat applet. Just move your finger on the mobile phone, you can get the daily sea surface wind field information of any sea area in the world anytime and anywhere, and you can query the distribution of typhoons or cyclones in a sea area and the change process in the past seven days without leaving home.