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Directional and frequency spread of surface ocean waves from CFOSAT/SWIM satellite measurements

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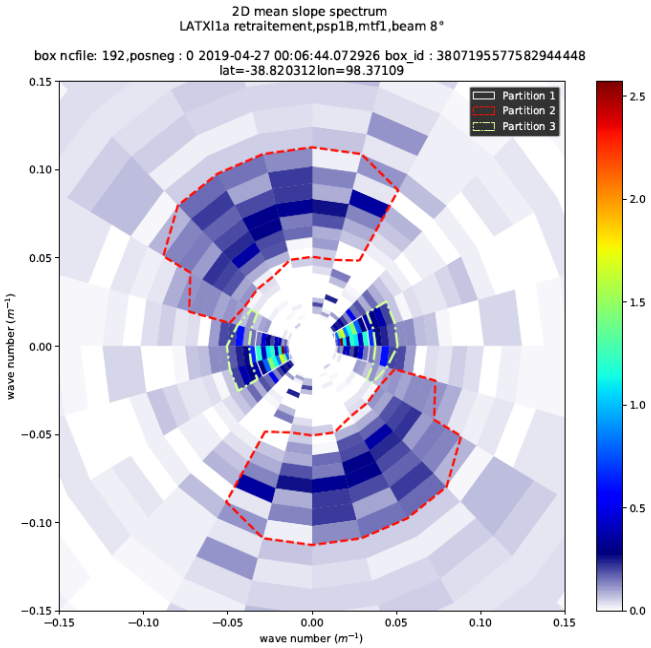

Understand and forecast ocean waves is very important for operational needs, such as navigation, coastal and offshore activities, but also for scientific needs. Indeed, ocean waves play a significant role on air-sea interactions that occur through complicated physical processes. Ocean waves are usually characterized by their significant wave height, their dominant wavelength and propagation direction. However, it is known that these principal parameters are not sufficient to fully characterize the distribution of wave energy and understand or validate the physical processes impacting its evolution during growth order decay. The SWIM instrument onboard the CFOSAT mission uses a new concept to measure ocean waves and provides very detailed information about the distribution of wave energy at the global scale. During this seminar, several parameters which quantify how the energy spreads around the dominant frequency and the dominant propagation direction of the waves will be presented as well as the Benjamin Feir Index (BFI), which characterize the probability of occurrence of extreme waves. Similarities with the MFWAM model will also be discussed.