

**S5-08**

## **Global Land Surface Phenology Monitoring Using the FY3D/MERSI-II**

### **NDVI Time Series**

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Accurate global vegetation phenology data are required to improve modeling of terrestrial ecosystem processes and understanding of vegetation-climate feedback. Medium-to-coarse resolution remotely sensed data is essential for monitoring vegetation phenology at large scales due to their synoptic coverage and repeated temporal sampling. In this study, the mean seasonal NDVI values derived from 4 years of FY3D/MERSI-II observations were used to characterize the global phenological patterns. To avoid impacts from snow/cloud and missing values, careful data screening and temporal smoothing techniques were implemented to reconstruct NDVI time-series, from which phenological metrics were extracted with the threshold method. The derived MERSI-II/NDVI phenology results were compared with the VIP (Vegetation Index and Phenology) phenology product and the VIIRS phenology product. It is found that the three products agree well in general with respect to the spatial pattern characteristics. The timings of the SoS (Start of Season) and EoS (End of Season) usually differ less than 40 days except in some areas affected by seasonal snow, or areas with limited seasonality or with short growing season length. Different definitions of phenological metrics are a main reason for the discrepancies, although data quality during key growing phase, temporal resolution and smoothing technique could also play important roles. This study demonstrates that the vegetation dynamics captured by MERSI-II/NDVI time series has

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a high degree of credibility. Our next step is to further refine the MERSI- II phenology algorithms and produce the phenology product annually in an operational way.