



## **RAPID DYNAMICS OF PINE ISLAND GLACIER ICE, WEST ANTARCTICA AND RECENT CALVING ON 25-SEP-2017**

West Antarctic ice sheet grounded on bedrock below sea level is playing a key role in the Earth's climate system. Pine island glacier (PIG) is actually one of the largest ice stream of Antarctica and a major contributor to sea level rise in West Antarctica. PIG has been undergoing significant changes (speedup, thinning, and ice front calving and advancement) over the last few decades.

To better understand these processes, we analysed 17 years MODIS data (2001-2017) along with Sentinel data of 2017. Sentinel-1A data of September 25, 2017 was utilised to measure the size of detached ice berg on that day. Annual surface ice velocity over PIG was estimated using image correlation technique, which applied on MODIS data (acquired during March-April period) of two successive years. Area indicating the year-to-year advancement or retreat of ice front was also measured.

It was observed that the glacier is showing frequent events of advancement and calving and thereby releasing the ice mass from ice sheet into the ocean. Detachment of ice mass of the size of approx. 282 Sq. Km. was observed on September 25, 2017 from PIG. Observations indicated that from 2001-2010 two large calving events were recorded, whereas subsequent to that from 2011 to 2017 three major calving events were observed that indicates the increase in the calving frequency.