

Latest InSAR/ICESat/CECS-NASA results from Pine Island/Thwaites Glaciers, West Antarctica

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Recent aircraft and satellite laser-altimetry surveys of the Amundsen Sea sector of West Antarctica show that local glaciers (Pine Island, Thwaites, Haynes, Pope, Smith, and Kohler) are discharging about 250 cubic km of ice per year to the ocean, which is 60 percent more than is accumulated within their catchment basins, and sufficient to raise sea level by more than 0.2 mm per year. Glacier thinning rates near the coast for 2002-2003 were approximately double those observed during the 1990s using satellite radar altimetry. Pine Island Glacier continued to accelerate between 2000 and 2004. Most of these glaciers flow into floating ice shelves over bedrock up to hundreds of meters deeper than previous estimates, providing escape routes for continental ice from further inland than anticipated if ice-sheet rapid retreat is underway.

We will discuss these results in details, with a particular emphasis on the comparison of CECS-NASA airborne laser altimetry data with ICESat satellite laser altimetry data.