

## **Observation and modeling the iceberg drift in the eastern Weddell Sea iceberg alley**

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The continental shelf of the eastern Weddell Sea is known as “iceberg alley”. Icebergs that calve at the coast of East Antarctica drift with the coastal current along the Fimbul Ice Shelf towards the Weddell Sea (Gladstone et al., 2001).

In the beginning of 2006, three large icebergs passed the Ekström Ice Shelf close to the sea ice edge. Using a series of ENVISAT Wide Swath images, they were monitored for nearly one year to investigate the influence of wind, ocean currents, sea ice and the iceberg draft on their drift patterns and to validate corresponding model simulations. The iceberg drift model is driven by the Finite-Elements Sea-ice Ocean Model (FESOM, Timmermann et al., 2009). It was run with a temporal resolution of 6 hours and a spatial resolution of 10 km close to the coast and 30 km further offshore. Besides comparison between iceberg drift observations and computer simulations for improving the model, the observation of icebergs in this region is of great importance for the logistic department at Alfred Wegener Institute because of the supply of the German overwintering station Neumayer III.

The drift of the three icebergs is modeled with different input configurations and parameters. Events with large differences between the modeled and the observed positions are investigated in detail. The goal of this study is to improve the accuracy of the iceberg drift model in the region of the Weddell Sea “drift alley” and thus to be able to forecast iceberg positions as support for marine traffic in this region.

### *References:*

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