ing scenario (IPCC RCP8.5). The Finite Element Sea Ice- Ocean Model (FESOM) will be forced with regional atmospheric model (RACMO2). The poster shows why it is a goog idea to combine these two models, the challenges and the expectations.

Kim Tae-Wan : Effects of wind and sea ice drift on the seasonal variation of warm circumpolar deep water in the Amundsen Sea

Spatial and temporal variation of the layer of warm and salty circumpolar deep water (CDW) in the center of the Amundsen Shelf was measured during two oceanographic surveys and a two-year mooring array. A hydrographic transect from the deep ocean, across the shelf break, and into the Dotson Trough shows a local elevation of the warm deep water layer at the shelf break. On the shelf, CDW flows southeast along the trough. Along its pathway to the ice shelves, CDW gradually becomes colder and fresher, presumably because of mixing with surface water and/or glacial meltwater. The thickness of the warm layer displays a seasonal variation with maximum thickness in austral summer and minimum in austral winter. The amplitude of this seasonal variation is up to 60 m. The variation in layer thickness gives rise to a seasonal variation of the CDW's heat content. In order to investigate the effects of wind and sea ice drift on the heat content, ocean surface stress was calculated using the ERA interim reanalysis wind data and observed sea ice velocity and concentration from satellites. Fields of Ekman pumping velocity were obtained from the ocean surface stress. The Ekman pumping at the shelf break, where the warm layer is elevated, shows a strong seasonal variation coinciding with the mooring data. The average wind field is eastward north of the shelf break and westward south of the shelf break for all seasons. The main effect of a layer of sea ice (between the wind and the water) is to reduce the surface stress and intensify the horizontal gradient of surface stress at the marginal ice zone. This is creates a divergence of the Ekman transport and a positive Ekman pumping at the marginal ice zone, if the wind direction is eastward. From February to April, the marginal ice zone is close to the shelf break, and the wind field is eastward, giving rise to a positive Ekman pumping that may explain the seasonal signal seen in the mooring data. During austral winter, the marginal ice zone is further north, so the Ekman pumping has been weakened due to the decreasing of horizontal gradient of surface stress at shelf break.

Kimura Satoshi : Estimation of ice shelf melt rate in the presence of thermohaline staircase

We observed diffusive-convection favourable thermohaline staircases directly beneath George VI Ice Shelf, Antarctica. A thermohaline staircase is one of the most pronounced manifestations of double-diffusive convection. Cooling and freshening of the ocean by melting ice produce cool, fresh water above the warmer, saltier water, the water mass distribution favourable to a type of double-diffusive convection known as diffusive convection. While the vertical distribution of water masses can be susceptible to diffusive convection, none of the observations beneath ice shelves so far have detected signals of this process and its effect on melting ice shelves is uncertain. Melt rate of ice shelves are commonly estimated by three-equation model, based on fully-developed, unstratified-turbulent flow over hydraulically smooth surfaces. Our observation raises doubts about the suitability of these assumptions made in the three-equation model.We estimate melt rate of the ice shelf by applying an existing heat flux parameterization of diffusive convection in conjunction with our measurements of oceanic conditions at one site beneath George VI Ice Shelf.

Kuhn Gerhard : The Filchner Ice Shelf during the past 30 kyrs

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Multibeam swath bathymetry data and acoustic sub-bottom profiles from Filchner Trough, a palaeo-ice stream trough on the Antarctic continental shelf in the southern Weddell Sea, are sparse. Over the last few decades several sediment cores have been recovered from this area, but only a few of the cores were dated. As a consequence, little is known about the Filchner Ice Shelf/Ice Sheet history during the Late Quaternary. Based on the few available terrestrial and marine data constraints two very different reconstructions of ice-sheet extent during the Last Glacial Maxium (LGM) and the timing of subsequent grounding zone retreat have been proposed for Filchner Trough. Mapping of subglacial bedforms on the seafloor has only recently started and indicates the presence of grounded ice along the entire Filchner Trough at some time in the past. Some giant gravity cores were taken from a formerly ice shelf covered area on the south-eastern Weddell Sea shelf in 1988 and 1991, shortly after a large calving event had