

SESSION: Innovation and development**MARS Themes:**

Earth systems observations

Innovation and development

Title:

Ice Load measurement and ice condition monitoring onboard S.A. Agulhas II

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Abstract:

The global warming is changing the Antarctic sea ice. For ship navigation, ice floe fields, which are relatively mild ice conditions, might become more common. The ice floe fields in the marginal ice zone constantly interact with and attenuate waves. The ice floe fields further inside the ice pack are less affected by the waves. In order to understand the mechanics of ice loads on ships in different ice floe fields, field measurements were conducted onboard S.A. Agulhas II during the SANAE 2022/2023 relief voyage. The ice loads on the ship hull were measured and linked with simultaneous ice conditions recorded with cameras and observed visually. Most data is from calm ice floe fields. The highest ice load recorded during this voyage occurred at a very low ice concentration and with a ship velocity of 11 knots. Severe ice loads were recorded also at high ice concentration. These have been related to force chains within the floe field.

Format:

Oral presentation

Keywords: (add; between keywords)

Ice load; ship; field measurement; Antarctica