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MATHEMATICS OF FROZEN SEAS

The opening of the Arctic Ocean is expanding navigational, economic and scientific opportunities, yet is also increasing potential threats to our national security and demands on the U.S. Navy.

The sea ice cover and its future trajectory enter into any considerations of the polar marine environment. Advancing our ability to understand, model, and predict the behavior of sea ice is critical to improving climate and ocean models, and in assisting U.S. military missions in the Arctic.

As a material sea ice exhibits composite structure on many length scales. A principal challenge is how to use information on smaller scale structure to find effective properties on larger scales relevant to climate and ecological models.

From tiny brine inclusions to ice pack dynamics on oceanic scales, and from microbes to polar bears, we'll tour recent advances in modeling sea ice and recount our Arctic and Antarctic expeditions to obtain data that inform the models.

**WEDNESDAY 29 JANUARY 2025
MAHAN AUDITORIUM
1900-2000**