



Going with the Floes

Sea ice is one of the least understood components of our climate. Naturally its abundance or scarcity is a telling sign of climate change, but sea ice is also an important actor in change as well, insulating the ocean and reflecting sunlight. A branch of mathematics called percolation theory helps explain how salt water travels through sea ice, a process that is crucial both to the amount of sea ice present and to the microscopic communities that sustain polar ecosystems. By taking samples, doing on-site experiments, and then incorporating the data into models of porous materials, mathematicians are working to understand sea ice and help refine climate predictions.



Image: Pancake ice in Antarctica, courtesy of Ken Golden.

For More Information: “Thermal evolution of permeability and microstructure in sea ice,” K. M. Golden, et al., *Geophysical Research Letters*, August 28, 2007.



The Mathematical Moments program promotes appreciation and understanding of the role mathematics plays in science, nature, technology, and human culture.