

Prof. warms to idea of studying Antarctic winter

BY CAMILLA MOORE
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Studying the behavior of electromagnetic waves in sea ice will take a University of Utah mathematician to Antarctica later this month.

Ken Golden, an associate professor of mathematics at the U., said he has been studying sea ice for years. "Sea ice is an extremely interesting subject," Golden said.

Sea ice forms the boundary layer between the ocean and the atmosphere in polar regions, according to Golden.

Sea ice determines the climate in a specific location, which in turn affects the climate all over the world, he said.

Sea ice also plays a fundamental role in the heat transfer between the ocean and the atmosphere, Golden said. The thickness of the ice also is a controlling factor in how the heat is transferred. The ice contains salt, and in some instances, the salt has been found to contain materials similar to those found in the human body, according to Golden.

Studying the electromagnetic waves and the properties of the sea ice should give the scientists an insight into this area of science too, Golden said.

The scientists will conduct

microwave experiments on the sea ice, using radar horns on the ship to bounce microwaves off of the sea ice, according to Golden. The scientists will then measure the backscattered waves.

Mathematics is an important component in studying the sea ice, according to Golden. He said he has made mathematics models of the sea ice, for which he makes theorems.

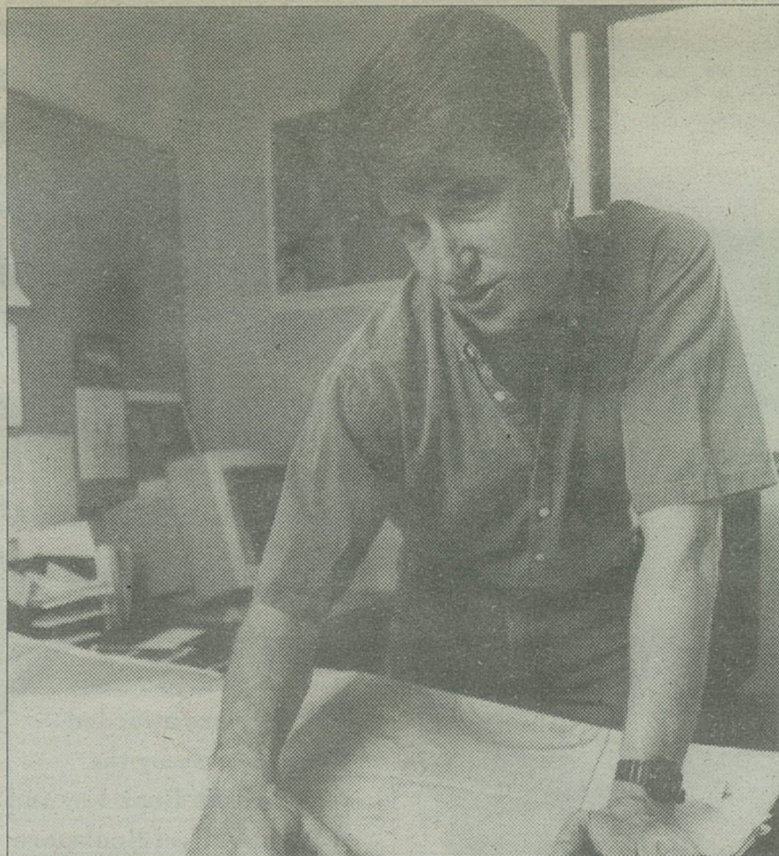
After making the models, Golden then studies the theorems and the models while trying to determine how the electromagnetic waves behave in the sea ice.

By actually participating in the study of the sea ice, Golden will be able to enhance his study of the electromagnetic properties of the sea ice rather than just working with his mathematical models.

Golden is the only mathematician involved in the study, and will be the only U. representative.

The mathematician will leave Salt Lake City for Antarctica on June 24. Flying from Miami, Florida to Santiago, Chile, Golden will continue the journey to a city on the southern tip of Chile, Puenta Arenas.

From Puenta Arenas, other scientists and Golden will board the Nathaniel B. Palmer, a National Science Foundation funded state-of-the-art research vessel. The group will be on board the vessel for two months.



Ken Golden, associate professor of mathematics at the University of Utah, points to Antarctica on a world map. Golden will be leaving for the distant continent in late June to study the behavior of electromagnetic waves in sea ice.