1070-86-2   **Kenneth M Golden*** (`golden@math.utah.edu`), University of Utah, Department of
Mathematics, 155 S 1400 E RM 233, Salt Lake City, UT 84112-0090. *Mathematics and the melting
polar ice caps.*

Polar ice is melting at an alarming rate – a strong signal that our climate is changing. In fact, most global climate models have significantly underestimated the dramatic decline of the summer Arctic sea ice pack. I will discuss how partial differential equations, dynamical systems, diffusion processes, and models from statistical physics are being used to help analyze the complex role of sea ice in the climate system. Key processes such as the melting and formation of seasonal ice must be better understood to improve projections of the fate of Earth's sea ice packs, and the response of polar ecosystems. Video and photos from recent Antarctic expeditions where we measured sea ice properties will be shown. (Received February 13, 2011)