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Modeling of Arctic Climate: Fairbanks-Barrow Top of the World Summer School

V.A. Alexeev, J.E. Walsh, and E.B. Sparrow
University of Alaska Fairbanks, Fairbanks, AK, United States (valexeev@iarc.uaf.edu, +1-907-474-2643)

Arctic climate is the result of a complex interplay between the atmosphere, the ocean, sea ice and a terrestrial component in which freezing and thawing are critical to variations over a range of timescales. In view of the delicate balances between these components and their poorly documented sensitivities, it is not surprising that global climate models show the largest disagreement among themselves, and also the strongest greenhouse-induced changes, in the polar regions. Since changes in the Arctic may well have global implications, it is essential that Arctic climate simulations be enhanced in order to reduce the uncertainties in projections of climate change. Given the challenges and opportunities in Arctic modeling, the International Arctic Research Center's (IARC) 2008 summer school at the University of Alaska Fairbanks (UAF), was designed to bring the next generation of climate modelers to the Arctic.

The two-week summer school brought together a group of 16 graduate students and young scientists, as well as specialists in Arctic climate and climate modeling, for two weeks, the first week in Fairbanks (May 27-31) and the second in Barrow (June 1-6). The young scientists gained a perspective on the key issues in Arctic climate from observational, diagnostic and modeling perspectives and received hands-on experience in the analysis of climate model output or in climate model experimentation at a level consistent with the students' expertise. The summer school consisted of background pedagogical lectures in the mornings, and mini-projects and informal discussions in the afternoons. The mini-projects have been performed in collaboration with lecturers, and utilized existing databases and available models. The second week was spent observing and experiencing Arctic research first-hand in Barrow, Alaska in coordination with the Barrow Arctic Sciences Consortium (BASC).

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