

AMERICAN METEOROLOGICAL SOCIETY – MARCH SCIENCE HIGHLIGHTS

Following are story ideas and tips about upcoming AMS meetings, papers in our peer-reviewed journals, and other happenings in the atmospheric and related sciences community.

- Unmanned Aircraft A Better Tool to Study Arctic Sea Ice Melt Ponds
- Solar Radiation, Cosmic Rays and Greenhouse Gases: What's Driving Global Warming?
- Weather Modification Conference
- What's behind those droughts and persistent wet spells over the United States and Mexico?
- AMS Journalism Award Deadline 1 May

Unmanned Aircraft A Better Tool to Study Arctic Sea Ice Melt Ponds. The use of unmanned aircraft is becoming increasingly important in the atmospheric science community. According to a study featured in the February issue of the AMS *Journal of Atmospheric and Oceanic Technology*, recent advances in unmanned aerial vehicle technology make them a better tool for monitoring and interpreting the spatial variations in the sea ice with melt ponds. The researchers made continuous observation of sea ice using a small robotic aircraft called the Aerosonde over the Arctic Ocean from Barrow, Alaska, on 20–21 July 2003. Over a region located 350 km off the coast of Barrow, images obtained from the aircraft were used to characterize the sea ice and to determine the fraction of melt ponds on both multiyear and first-year ice. For a copy of the paper contact Stephanie Kenitzer.

Solar Radiation, Cosmic Rays and Greenhouse Gases: What's Driving Global Warming? What are the relative contributions from the sun, cosmic rays, and greenhouse gases, to the observed warming in the late 20th century and what are their expected contributions during the 21st Century? How does this compare to natural climate variability of past centuries and millennia? What is the principle driver or drivers of global warming in the 20th and 21st centuries? How are cosmic rays different from solar irradiance? Are there direct measurements of solar irradiance changes over the last 30 years or so? If so, what do these measurements show? What are the signals of this solar variability in the Earth's atmosphere, and how do climate models reproduce these? Are we likely to observe additional changes in solar irradiance in the future and what might such variability have as an effect on climate? How is the ozone layer affected by solar activity changes and how does it influence surface weather and climate? These questions will be addressed at the next AMS Environmental Science Seminar on Monday, March 24 from 12 – 2p.m. in the Russell Senate Office Building, Room 253 Washington, DC. More details online at: <http://www.ametsoc.org/atmospolicy/EnvironmentalScienceSeminarSeries.html>

Weather Modification Conference. The 17th Conference on Planned and Inadvertent Weather Modification, cosponsored by the AMS and the Weather Modification

Association, will be held April 21-25, 2008 at the Westin Westminster in Westminster, Colorado. Topics range from geo-engineering to atmospheric heating. There will be sessions about recent weather modification projects around the world. The complete program is online at

http://ams.confex.com/ams/17WModWMA/techprogram/programexpanded_492.htm

Additional details are at <http://www.ametsoc.org/MEET/fainst/200817wmodwma.html>

What's behind those droughts and persistent wet spells over the United States and Mexico? Droughts and persistent wet spells over the United States and northwest Mexico have preferred regions of occurrence and persistence according to research published in the March issue of the *AMS Journal of Climate*. Wet or dry conditions that persist more than 1 year tend to occur over the interior United States west of 90°–95°W and northwest Mexico. In contrast, events over the eastern United States are less likely to occur and often last less than 6 months. The long persistent drought and wet spells are often modulated by low-frequency sea surface temperature anomalies (SSTAs). The persistent dry or wet conditions over northwest Mexico and the Southwest are associated with decadal variability of SSTAs over the North Pacific. Persistent events over the northwestern mountains are associated with two decadal SSTA modes. One mode has loadings over three southern oceans and another one is an El Niño–Southern Oscillation (ENSO) like decadal mode. Wet and dry conditions over the Pacific Northwest and the Great Plains are often associated with ENSO. The seasonal cycle of precipitation over the central-eastern United States, the East Coast, and the Ohio Valley is weak. Drought and wet spells over these regions are less persistent because the ENSO events have opposite impacts on precipitation for summer and winter. For a copy of the paper contact Stephanie Kenitzer.

AMS Journalism Award Deadline 1 May. Nominations for the *AMS Award for Distinguished Science Journalism in the Atmospheric and Related Sciences* are now being accepted. The nomination form is online at http://www.ametsoc.org/awards/sciencejournalism_NominationForm.pdf and is due by 1 May 2008. Self-nomination is accepted.

With more than 12,000 members, the AMS (<http://www.ametsoc.org>) is the nation's leading professional society for those involved in the atmospheric and related sciences.

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