



RAL Seminar

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The National Mosaic and Q2 (NMQ) system: A Next-Generation Source for Multi-sensor Quantitative Precipitation Estimates (QPE)

by

Steve Vasiloff

Hydromet Research Group
National Severe Storms Laboratory

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Accurate quantitative precipitation estimates (QPE) and very short-term quantitative precipitation forecasts (VSTQPF) are critical to accurate monitoring and prediction of water-related hazards and water resources. While tremendous progress has been made in the last quarter century in many areas of QPE and VSTQPF, significant gaps continue to exist in both knowledge and capabilities that are necessary to produce accurate high-resolution precipitation estimates at the national scale for a wide spectrum of users. Toward this goal, a national next-generation QPE and VSTQPF (Q2) Workshop was held in Norman, OK, on 28–30 June 2005. Scientists, operational forecasters, water managers, and stakeholders from public and private sectors, including academia, presented and discussed a broad range of precipitation and forecasting topics and issues, and developed a list of science focus areas. To meet the Nation's needs for the precipitation information effectively, the authors herein propose a community-wide integrated approach for precipitation information that fully capitalizes on recent advances in science and technology, and leverages the wide range of expertise and experience that exists in the research and operational communities. The concepts and recommendations from the Workshop form the Q2 science plan and a suggested path to operations. Implementation of these concepts is expected to improve river forecasts, flood and flash flood watches and warnings and to enhance various hydrologic and hydrometeorological services for a wide range of users and customers. In support of this initiative, the National Mosaic and Q2 (NMQ) system is being developed at the National Severe Storms Laboratory to serve as a community test bed for QPE and VSTQPF research and facilitate the transition to operations of research applications. The NMQ system provides a real-time, around-the-clock, data infusion and applications development and evaluation environment, and thus offers a community-wide platform for development and testing of advances in the focus areas.