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Nota di contenuto	1. The World Climate Research Program Research Strategy and Priorities: Next Decade -- 2. Challenges of a Sustained Climate Observing System -- 3. On the Reprocessing and Reanalysis of Observations For Climate -- 4. Climate Processes: Clouds, Aerosols and Dynamics -- 5. Aerosol Cloud-Mediated Radiative Forcing: Highly Uncertain and Opposite Effects From Shallow and Deep Clouds -- 6. Improving Understanding of the Global Hydrologic Cycle -- 7. Land Cover and Land Use Changes and Their Impacts on Hydroclimate, Ecosystems and Society -- 8. Prediction From Weeks To Decades -- 9. Assessing the Reliability of Climate Models, CMIP5 -- 10. Changes In Variability Associated With Climate Change -- 11. Understanding and Predicting Climate Variability and Change at Regional Scales -- 12. Attribution of Weather and Climate-Related Extreme Events -- 13. Challenges in Estimating and Understanding Recent Changes in the Frequency and Intensity of Extreme Climate and Weather Events -- 14. Carbon Dioxide and Climate: Perspectives on a Scientific Assessment -- 15. Atmospheric Composition, Irreversible Climate Change, and Mitigation Policy -- 16. Building Adaptive Capacity To Climate Change in Less Developed Countries -- 17. A Climate and Health Partnership to Inform the Prevention and Control of Meningococcal Meningitis in Sub-Saharan Africa: The MERIT Initiative.

Sommario/riassunto

This volume offers a comprehensive survey and a close analysis of efforts to develop actionable climate information in support of vital decisions for climate adaptation, risk management and policy. Arising from submissions and discussion at the 2011 Open Science Conference (OSC) of the World Climate Research Program (WCRP), the book addresses research and intellectual challenges which span the full range of Program activities. Some 1900 participants in the Conference, including 541 graduate students and early career scientists from 86 nations and more than 300 scientists from developing nations, were invited to provide comments on the papers, both before the conference and in themed daily plenary sessions. The resulting book incorporates the contributions of distinguished climate scientists as well as experts who use science-based climate information to formulate policy and initiate responsive action. Climate Science for Serving Society: Research, Modeling and Prediction Priorities fosters a more effective dialogue between the climate information and knowledge developers – the research community – and decision makers who must respond to difficult adaptation, mitigation and risk management issues.