

Next Generation Hydrologic Models: Breakout Report

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Presentation Outline

- Framing questions/suggestions
- Potential Modeling System Goal
- Potential Modeling System Requirements
- Possible Attributes of Next Gen Models

Framing questions/suggestions

- Hydrologic prediction service demands vary by scale
- Human dimensions.
- Importance of Education/Training to support Model deployment
- NOAA Cooperative Institutes focused on Hydrology
- Quantification of Uncertainty

Potential Modeling System Goals

- Develop models that require little or no calibration
- Apply system to develop hydrologic scenarios.
- Model structure that supports multiple process hypotheses & process interactions
- Simulation of water, energy and mass (nutrient) balances
- Support high spatial-resolution forecasting (~1km res)
- Calibration issues

Potential Modeling System Requirements

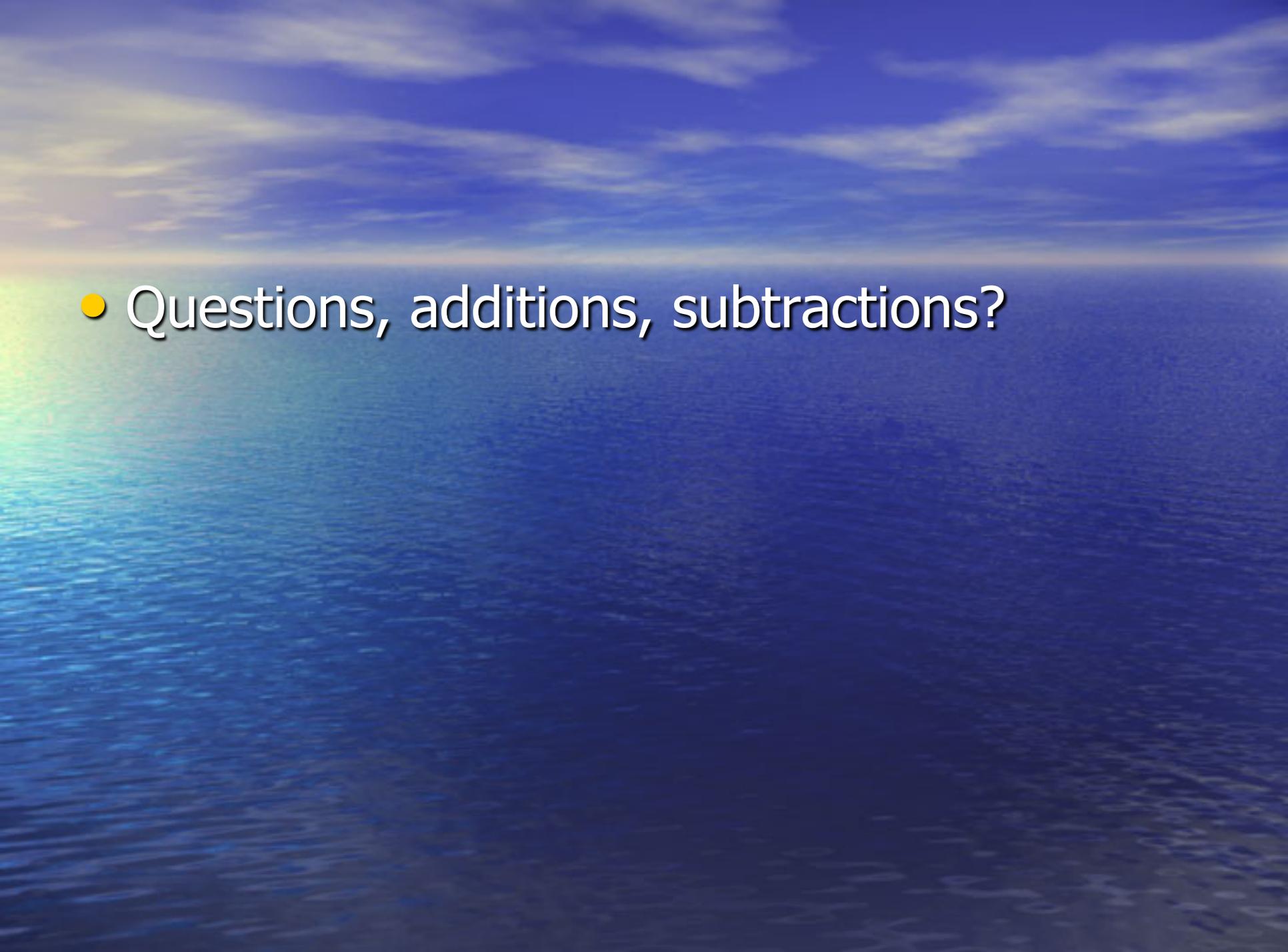
- Intelligent Grids
- Use of existing observations and anticipate new developments
- Simulation of Water Management Actions
- Scope of processes
- Simulate energy budget, not just water budget
- Support prediction on short to long time scales, from highest to lowest flows
- Forecast other variables in addition to streamflow

Possible Attributes of Next Gen Models

- Linked/nested system of models
- Single unified/community model?
- Multiple model calibrations, targeting to different operational forecasting purposes?
- Geography
- Address processes not well-represented in current services

Data requirements to support Next Gen Models

- Pursue field campaigns
- Reach out to other disciplines
- Soil moisture and groundwater monitoring
- Real-time verification information
- Radiation components
- Water Management actions
- Data Integration
- Hydrologic data standards

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- Questions, additions, subtractions?