

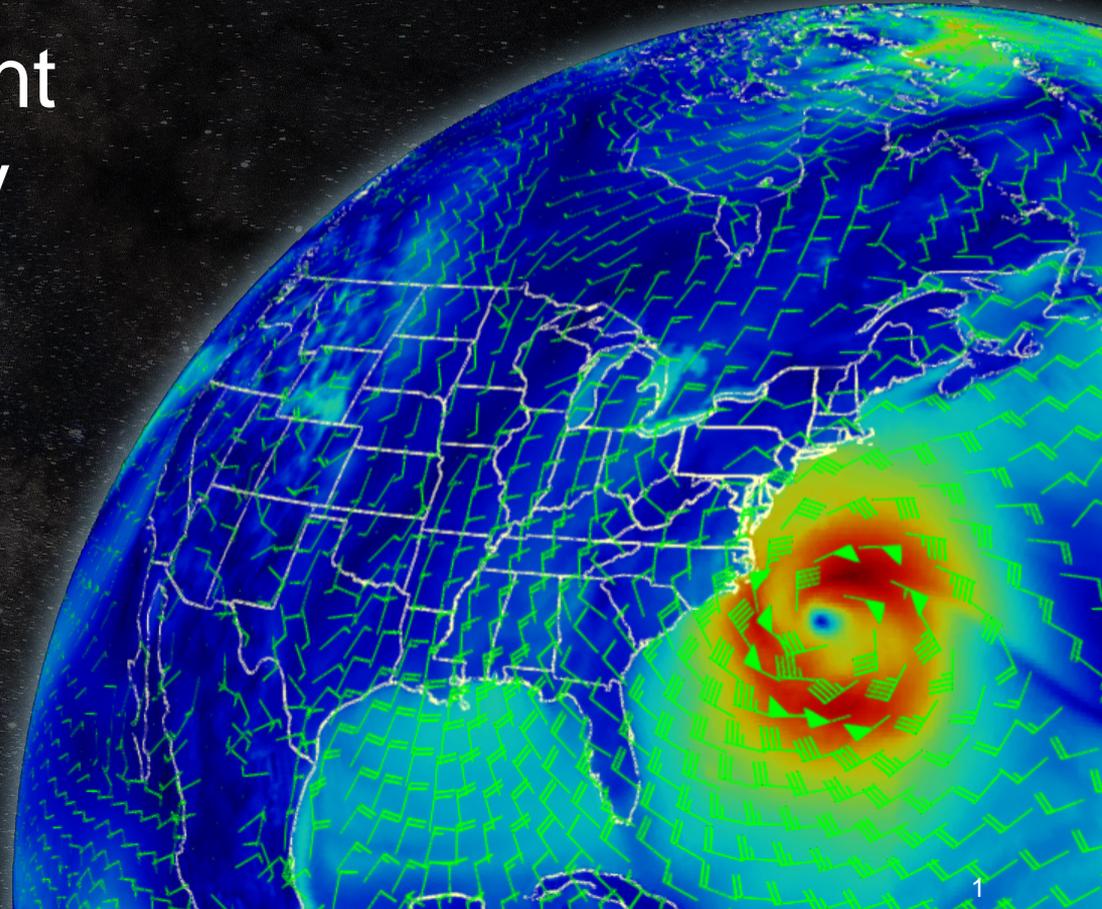
Research for Weather-Dependent Renewable Energy

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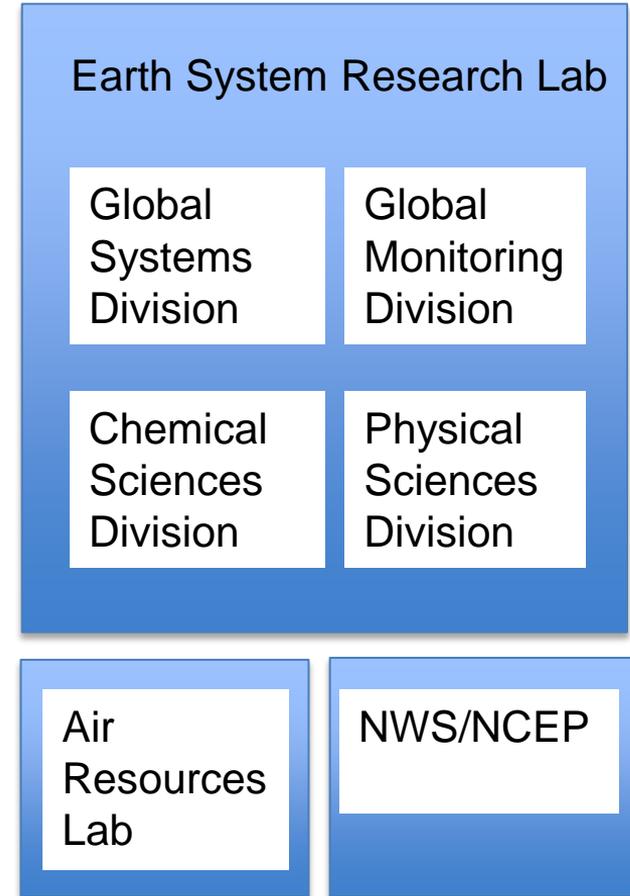


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NOAA/ESRL/GSD Roles in Renewable Energy

- New NOAA effort.
- ESRL uniquely qualified.
- All four ESRL divisions contribute.
- Partnership with DOE, NCAR, and private sector.
- Utilities, grid operators, and private forecast vendors consider the Rapid Refresh (RAP) and High Resolution Rapid Refresh (HRRR) to be state-of-the-art.



- Physical processes that affect irradiance and turbine-height winds
- Model physics and data assimilation
- Optimal suite of sensors to support renewable energy
- Balance of power supply and demand
- Design optimized energy systems using high resolution weather data.



Projects

- Wind Forecast Improvement Projects
- Solar Forecast Improvement Project
- National Energy Weather System

