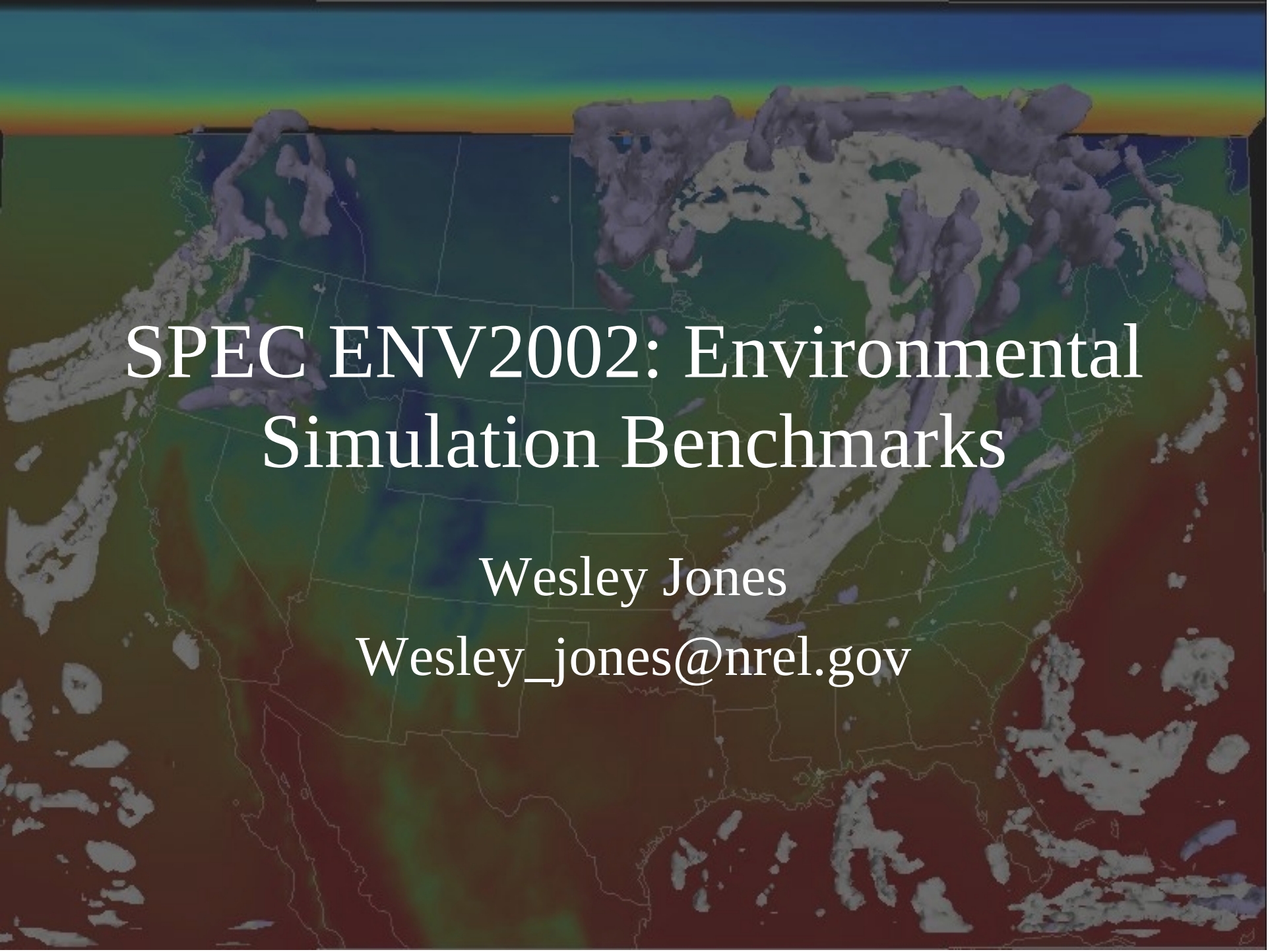

SPEC ENV2002: Environmental Simulation Benchmarks

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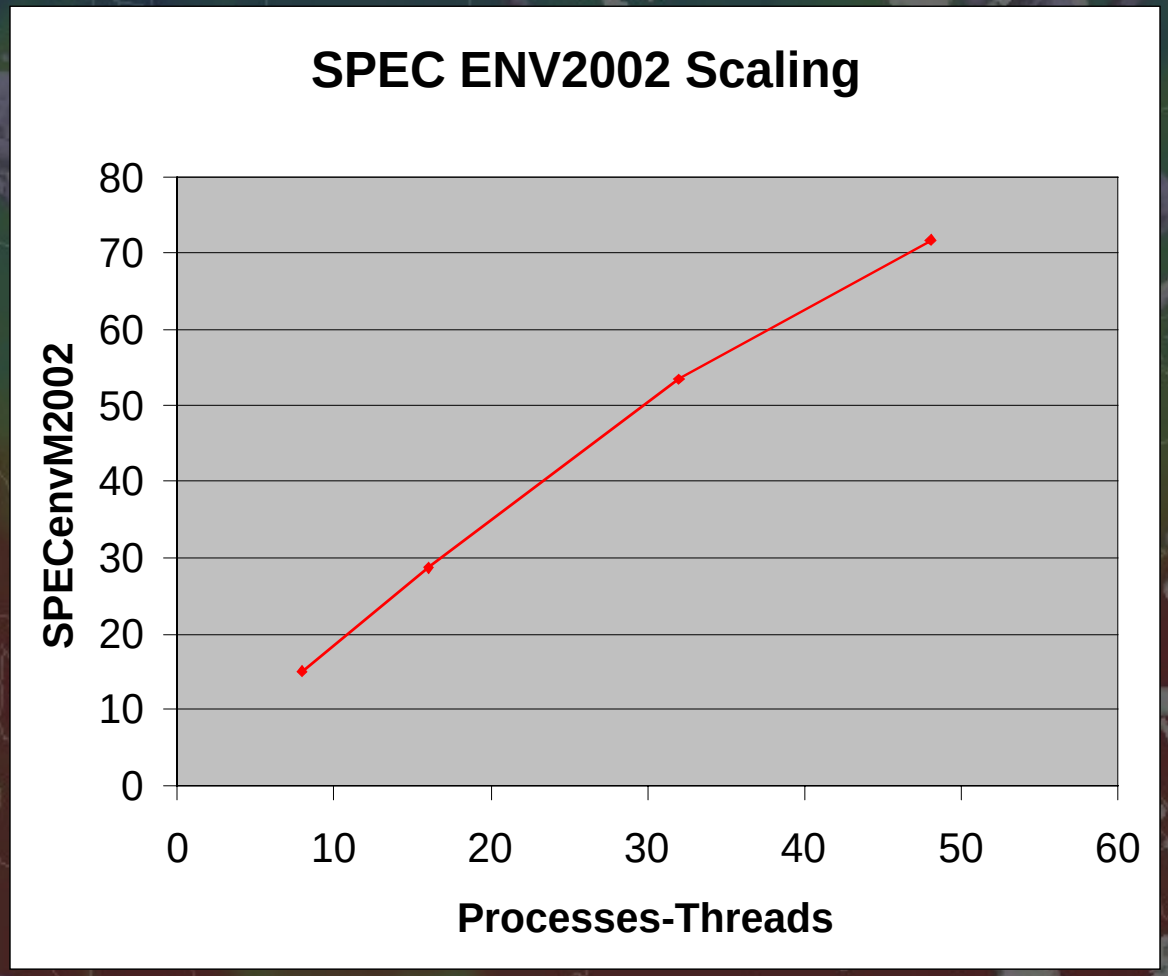
SPEC ENV2002

- Based on the WRF weather model, a state-of-the-art, non-hydrostatic mesoscale weather model, see http://www.wrf-model.org
- The WRF (Weather Research and Forecasting) Modeling System development project is a multi-year project being undertaken by several agencies.
- Members of the WRF Scientific Board include representatives from EPA, FAA, NASA, NCAR, NOAA, NRL, USAF and several universities.

SPEC ENV2002

- SPEC HPG integrated version 1.2.1 of the WRF weather model into the SPEC tools for building, running and verifying results. This means that the benchmark runs on more systems than WRF has officially been ported to.
- Results available soon @ www.spec.org

SPEC ENV2002



SPEC ENV2002

- Preprocessing directives are used within the SPEC runtools and WRF source code to create executables that can run in serial mode or in parallel mode using industry standard parallel APIs, OpenMP, MPI or mixed MPI-OpenMP (Hybrid).
- NetCDF is used for I/O. Benchmarkers, use a standard distribution of NetCDF and link it into the SPEC ENV2002 benchmark.

SPEC ENV2002

- The WRF datasets used in SPEC ENV2002 are created using the WRF Standard Initialization (SI) software and standard sets of data used in numerical weather prediction.
- The benchmark runs use restart files that are created after the model has run for several simulated hours. This ensures that cumulus and microphysics schemes are fully developed during the benchmark runs.

SPEC ENV2002

- The initially: Medium data, SPECenvM2002
  - 22km resolution
  - 260x164x35 grid over Continental United States
  - Full physics
  - mass dynamical core
  - I/O associated with startup and final result.
  - Simulates weather for a 24 hour period starting from Saturday, November 3nd, 2001 at 12:00 A.M.
- SPECenvS2002 provided for benchmark researchers interested in smaller problems.
- Test and Train data sets for porting and feedback.

SPEC ENV2002