



# Jeff Durachta

*NOAA Geophysical Fluid Dynamics Lab*

“The GFDL Modeling Systems Division”

November 10, 2021

2:00 p.m.- 3:00 p.m.

ZoomGov Meeting ID: 161 461 6931

[Join Here](#)

## Abstract:

Founded in 1955 under the leadership of Joseph Smagorinsky, scientists at NOAA's Geophysical Dynamics Laboratory develop and apply Earth system models and computer simulations to improve our understanding and prediction of all aspects of the climate system. The lab is organized around Divisions that generally focus on particular scientific areas such as Atmospheric Physics, Weather and Climate Dynamics, Ocean and Cryosphere, etc. Unique among the lab's Divisions is the Modeling Systems Division (MSD). MSD's mission is to develop, deploy and maintain the software infrastructure necessary to harness today's WAN connected HPC centers with various compute platforms and archive systems. As such, MSD is organized around 3 principle activities:

- The Flexible Modeling System (FMS): Core model infrastructure development and model component integration
- The FMS Runtime Environment (FRE): Workflow automation
- Data Services: Data publishing through various mechanisms such as ESGF and the GFDL Data Portal

The talk will provide an overview and selected details in each of these endeavors.

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## Bio

After completing his Ph.D. in Theoretical Physics from the University of Maryland, College Park, Jeff joined IBM's HPC Applications Group located in Kingston, New York working first on application performance optimization for IBM's vector platform. Given that point in HPC history, Jeff was soon pulled into application parallelization, performance analysis and optimization for RISC architectures as IBM launched the RS/6000 processor and later, the IBM SP series of parallel systems. In 1998, Jeff left IBM to start an independent consulting practice, at the time working primarily with the LANL Telluride Project Team on performance optimization for Truchas; their manufacturing simulation tool. In 1999, Jeff also gained the GFDL as a client where he has worked in various roles, following the path to what has now become the Modeling Systems Division. Jeff became Engineering Lead for MSD in 2009, a Federal Employee in 2016, Deputy Lead for MSD as it became a Division in 2019 and Lead for MSD in 2021.