# *Asynchronous I/O Using the Earth System Modeling Framework*

## User Productivity Enhancement, Technology Transfer, and Training (PETTT)

***Presented by***

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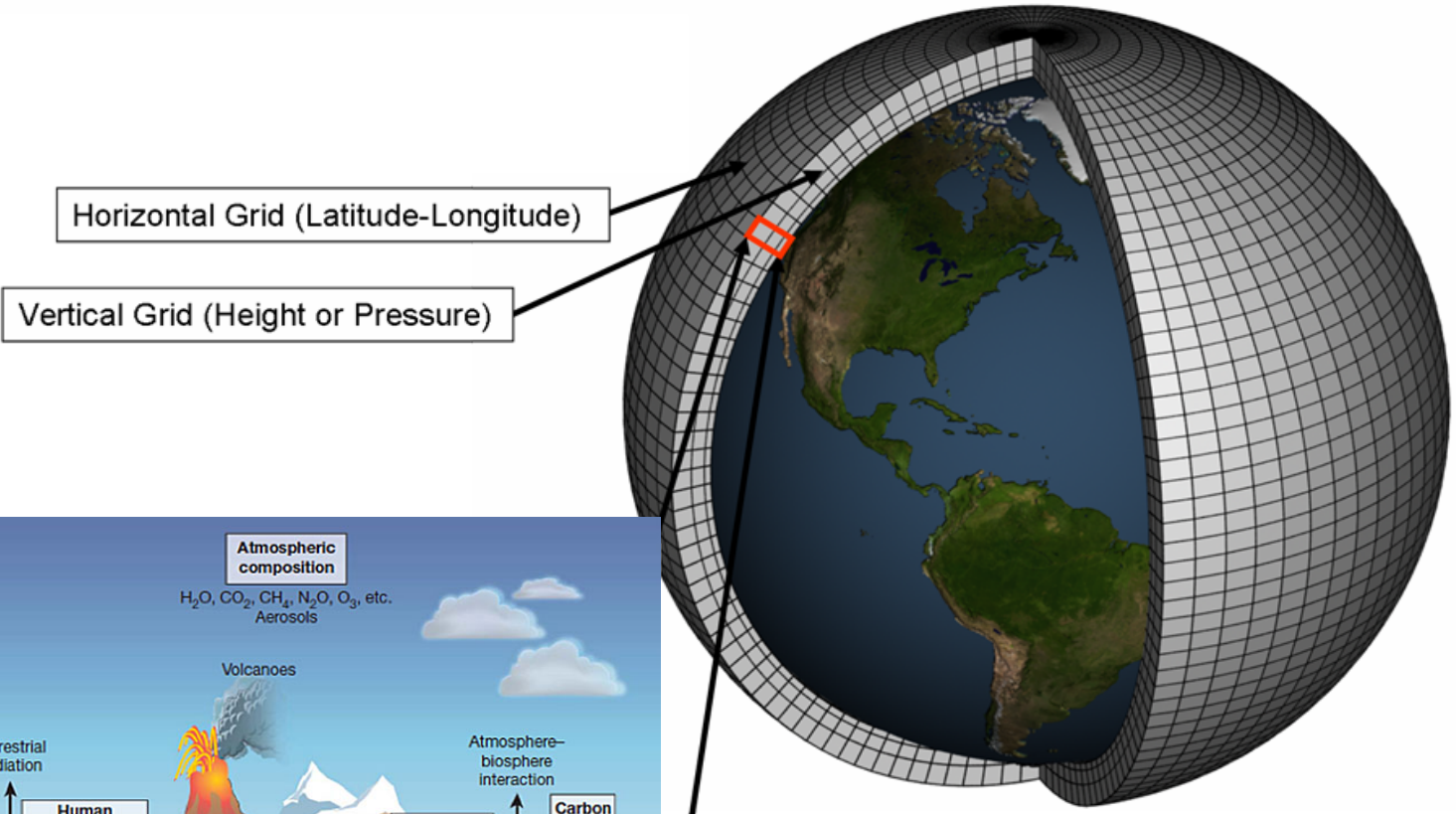
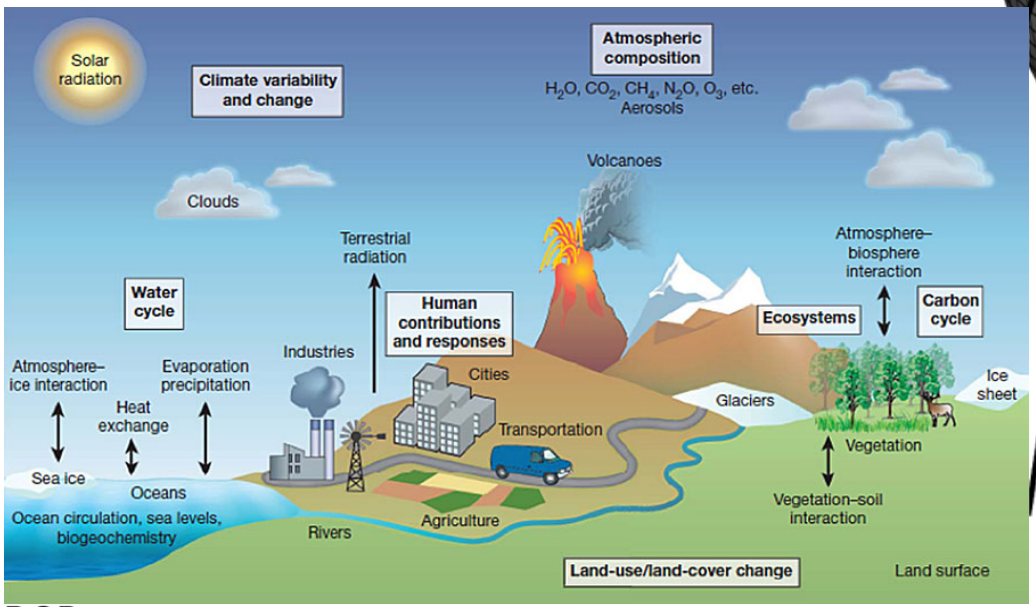
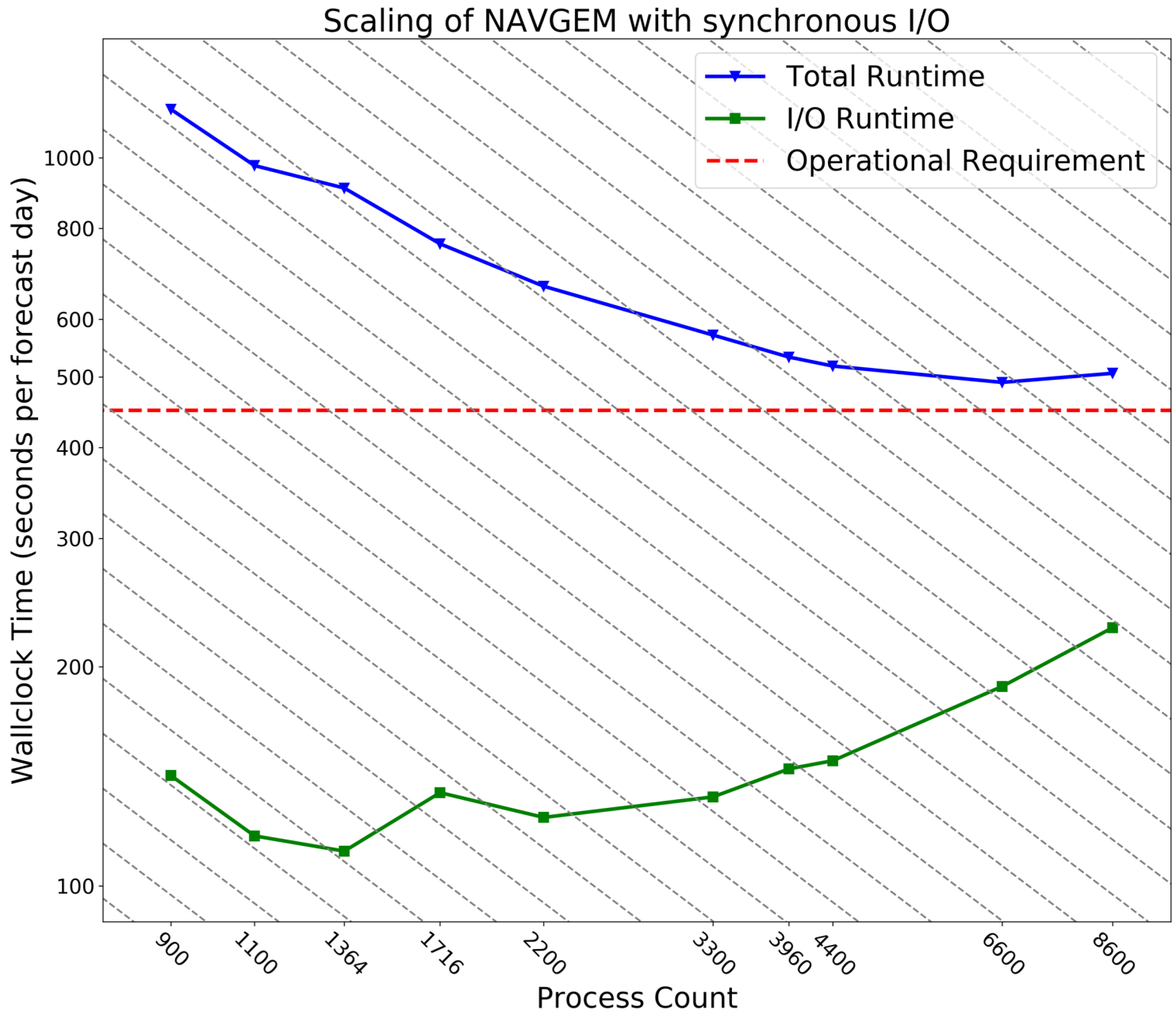
# Numerical Weather Prediction Models

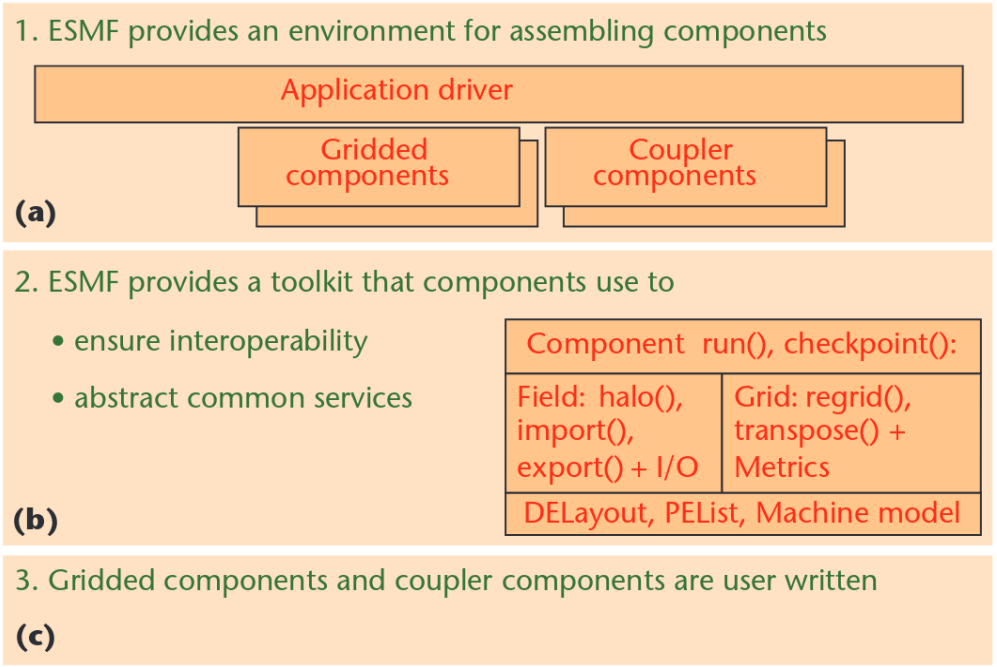



http://www.gfdl.noaa.gov/pix/model_development/climatemodel.png



# Earth System Modeling Framework (ESMF)




The Earth System Modeling Framework (ESMF) programming paradigm. An application is an assembly of (a) one or more gridded and coupler components. Components can use the (b) ESMF infrastructure toolkit, but all components are primarily (c) user written).[1]

- Open source project
- Component framework used to couple earth system models
- Includes an *infrastructure* of utilities that can be used to build model components
- Includes *superstructure* that is used to couple components together
- Performs fast parallel regridding and redistribution

1) C. Hill, C. DeLuca, Balaji, M. Suarez and A. Da Silva, "The architecture of the Earth System Modeling Framework," in Computing in Science & Engineering, vol. 6, no. 1, pp. 18-28, Jan.-Feb. 2004.