

# Statistics and the DAI

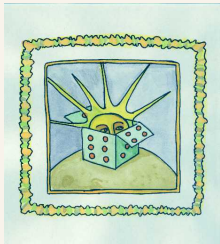
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National Center for Atmospheric Research

- Image update/Retreat Goals
- Deep thought and 42



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# Overview

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The Geophysical Statistics Project is a statistical research group at NCAR. It is supported mainly by NSF Division of Mathematical Sciences.

## New Section

Got Statistics?

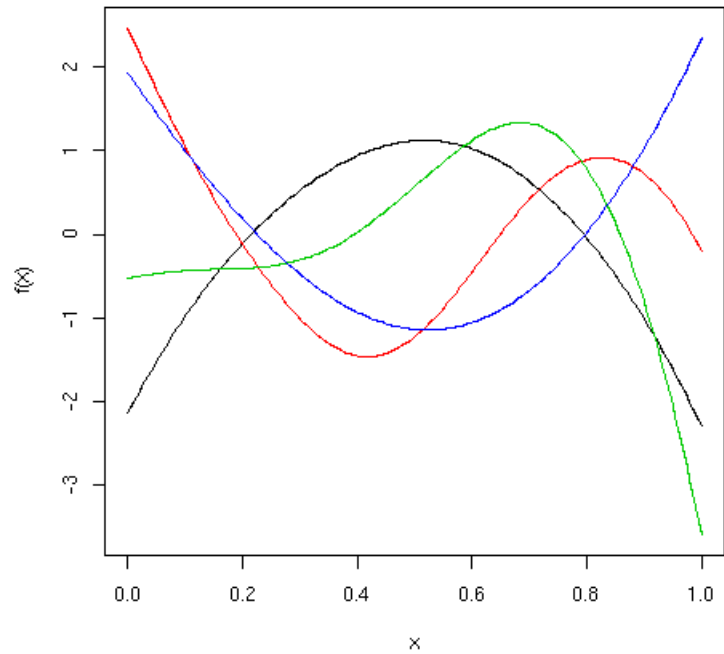
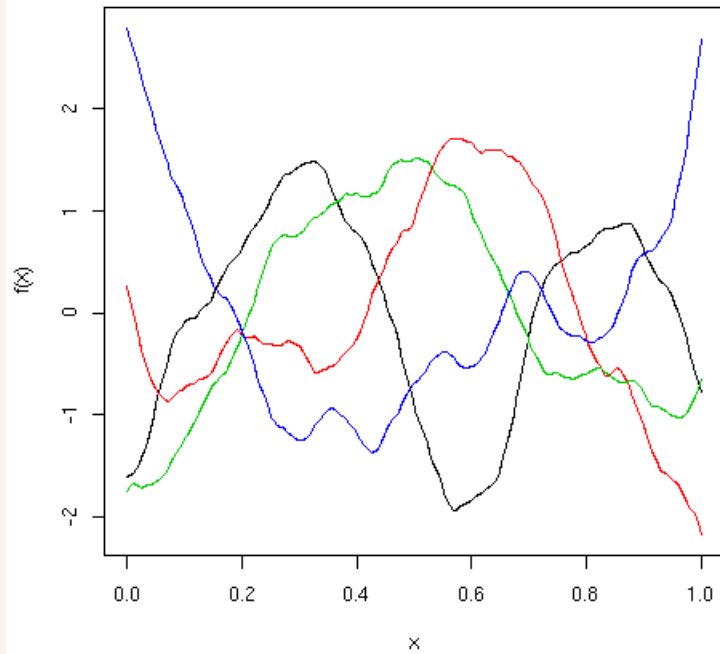
# “Data”

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**Numerical models produce data at different scales.  
Statistical techniques can be use to productively summarize and probe model output.**

# Multiresolution covariance model

“True function”



Some details

# Wait for it ...

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$$f(x) = \sum_{j=1}^{\infty} a_j \psi_j(x)$$

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$\{\psi_j\}$  **Wavelet basis function – fixed.**

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$$f(x) = \sum_{j=1}^{\infty} a_j \psi_j(x)$$

$\{\psi_j\}$  **Wavelet basis function – fixed.**

$\{a_j\}$  **Gaussian with a small number of correlations – random.**

# Very fancy equation

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Simulated curves as prior:

$$f(x) = \sum_{j=1}^{\infty} b_j \psi_j(x)$$

where  $a_j$  is random.

New Section

Simulated curves as prior:

$$f(x) = \sum_{j=1}^{\infty} b_j \psi_j(x)$$

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covariance model figure



# The End

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**Thanks for playing.**