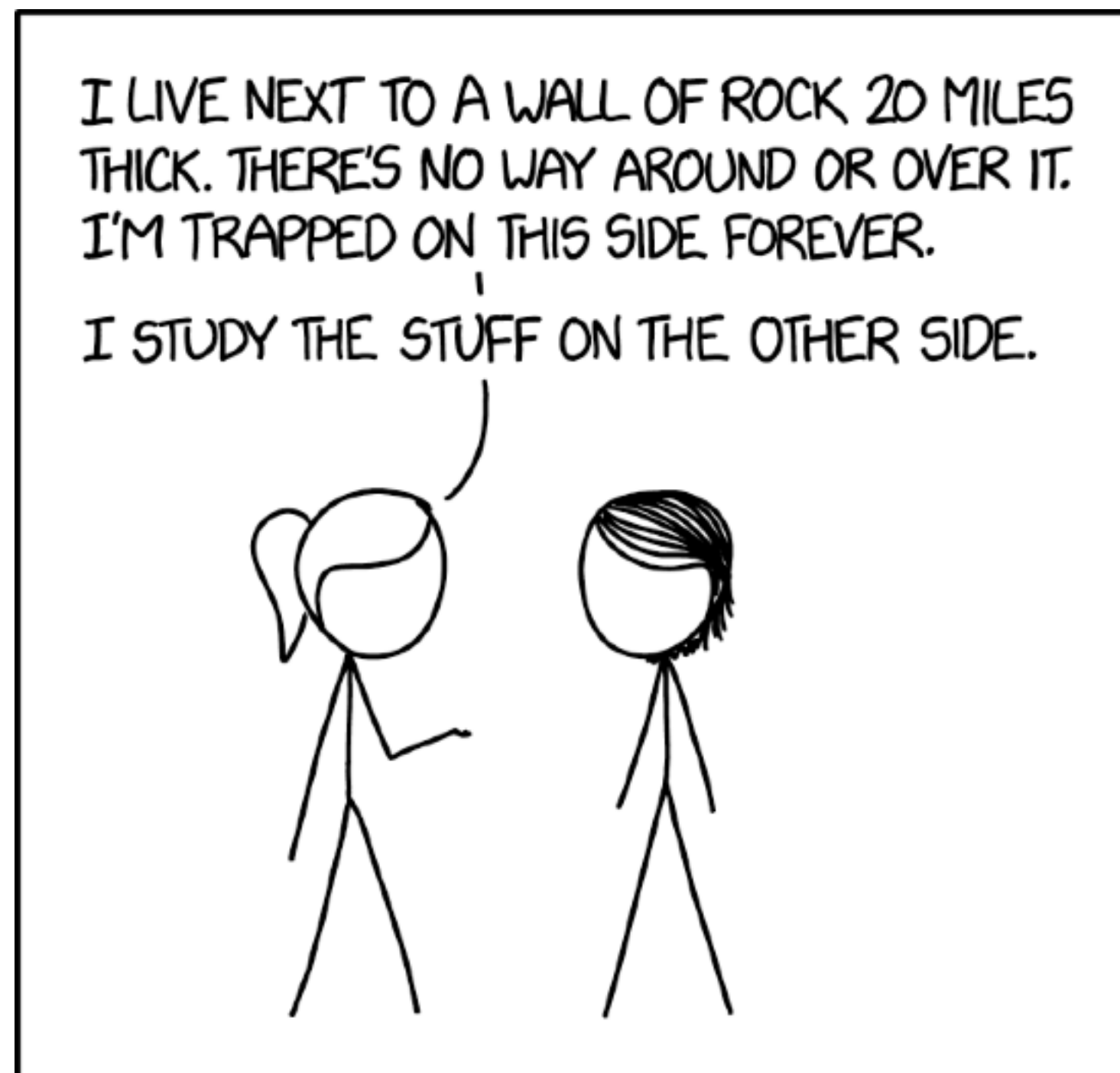
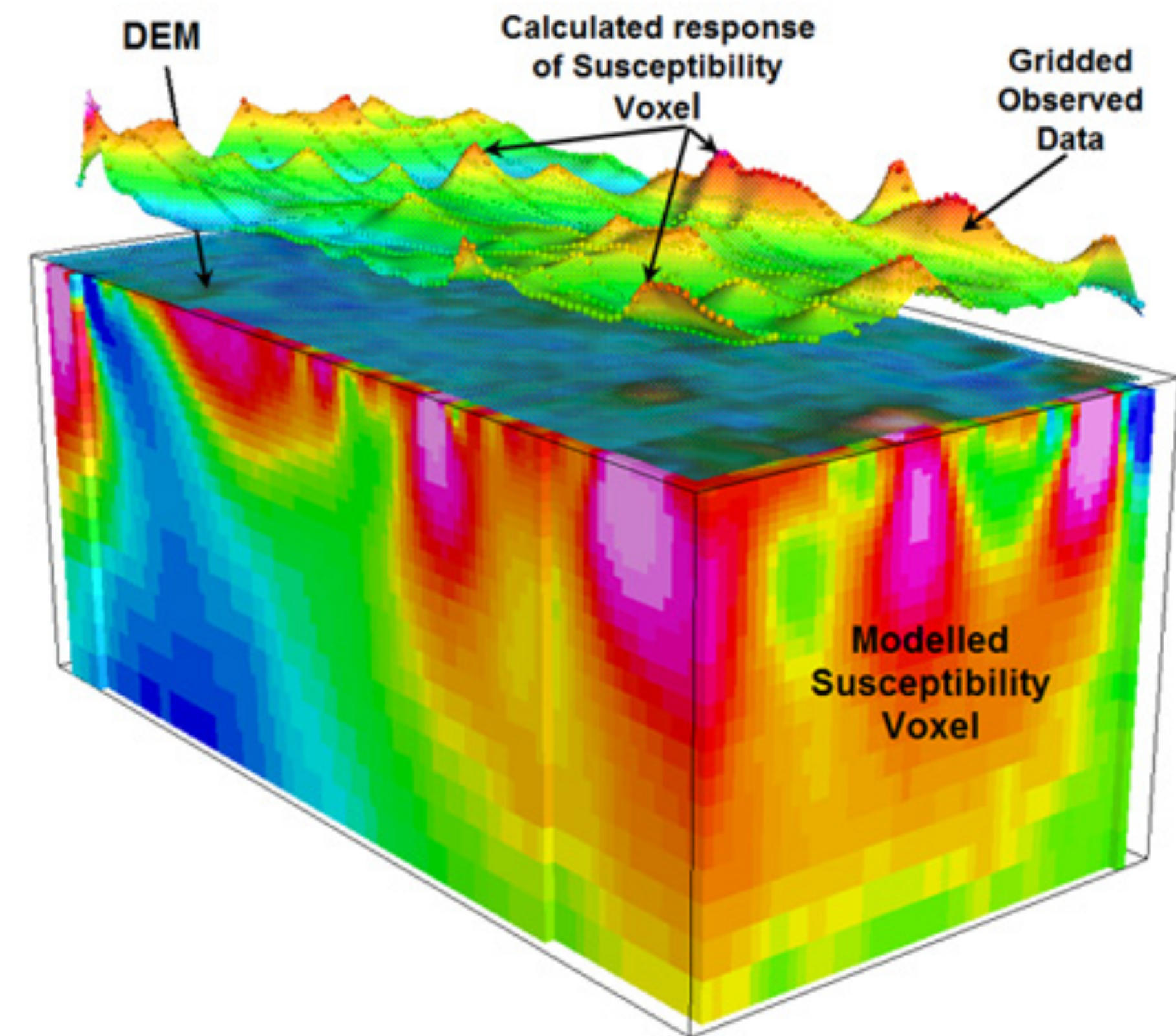


Inverse problems



MANTLE GEOLOGY SEEMS LIKE
THE MOST FRUSTRATING FIELD.



$$g(x) = \int K(x, y) f(y) dy$$

data \nearrow *model* \nearrow *stuff we want to know about*

Inference frameworks

Wright-Fisher process at the core

Summary statistics
and simple calculations
(small data, simple population)

Π : average pairwise divergence

S : # segregating sites

T_D : deviation from neutrality

Probabilistic models
(big data, more complex populations)

Forward time:

- PDEs / diffusion

- selective sweeps



Reverse time:

- coalescent genealogy

- coalescent HMM



Machine learning
(big data, arbitrarily complex population)

Supervised learning

