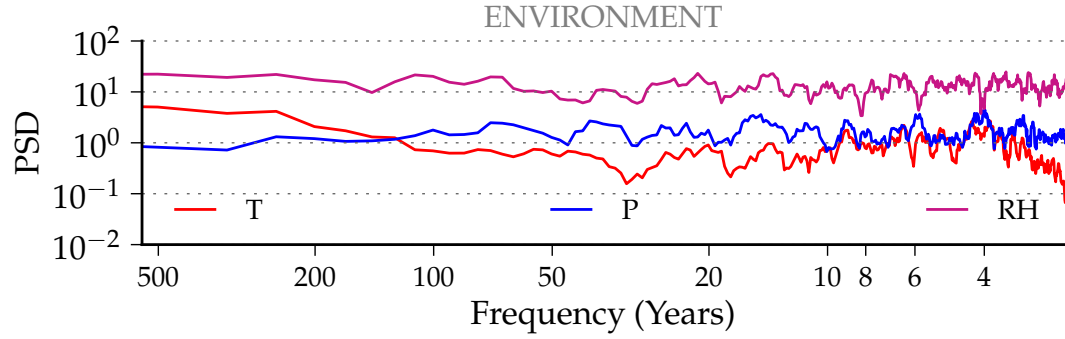


PROXY SYSTEM MODEL: TREE CELLULOSE $\delta^{18}\text{O}$

Simulated MTM Spectra for each transformation, La Selva

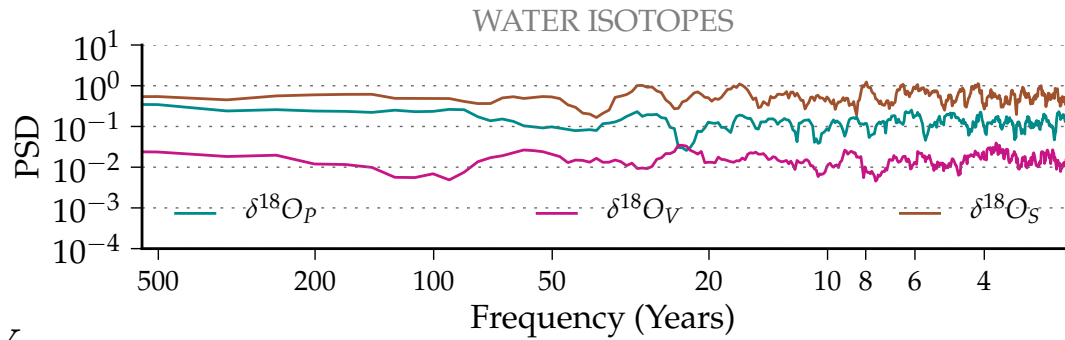
CLIMATE INPUTS:

temperature
precipitation
relative humidity



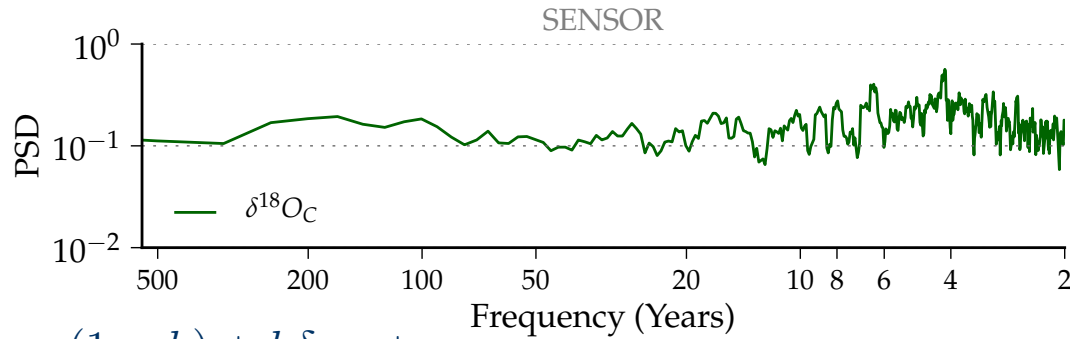
WATER ISOTOPE PHYSICS INPUTS:

$\delta^{18}\text{O}_P, \delta^{18}\text{O}_S, \delta^{18}\text{O}_V$



SENSOR:

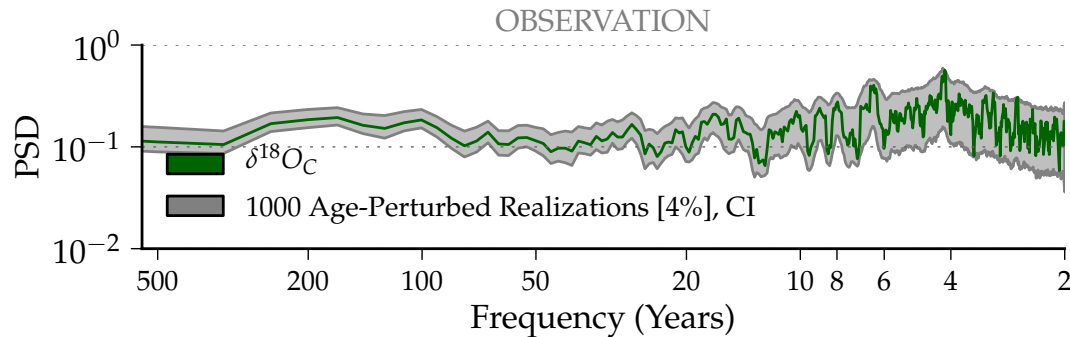
biological fractionations



$$\delta^{18}\text{O}_{\text{cellulose}} = (1 - f)[\epsilon_l + \epsilon_k(1 - h) + h\delta_{\text{atm}} + (1 - h)\delta_{\text{sourcewater}}] + f\delta_{\text{sourcewater}} + \epsilon_{\text{biochem}}$$

OBSERVATION:

layer counting
isotope analysis



$$t_i = t_{i-1} - 1 - \Delta_i$$

$$\Delta_i = 1 + P_i^{\theta_1} - \min(P_i^{\theta_2}, 1)$$