



Objective(Maximize):

$$\begin{aligned}\text{Bending stiffness per mass of material} &= \frac{EI}{m}; \text{ Where } m = \rho V \\ &= \frac{EI}{\rho V}\end{aligned}$$

$$\text{This results in a material index } M = \frac{E}{\rho}$$

$$\log(M) = \log(E) - \log(\rho)$$

Material index loci in the form of: $\log(E) = \log(\rho) + \log(M)$