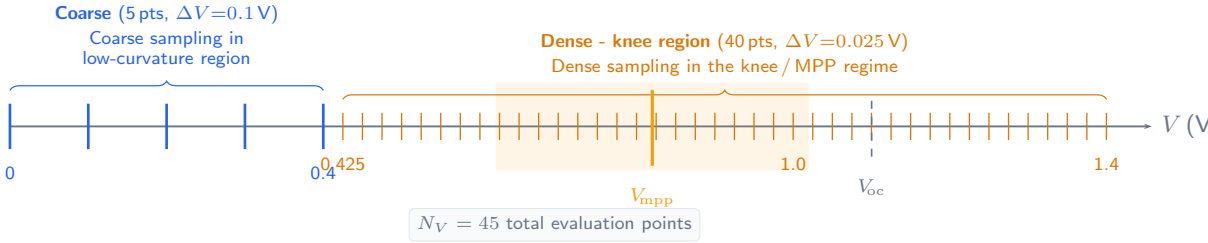
## (a) Non-uniform voltage grid design




## (b) Weighted error definition

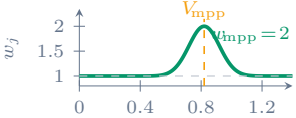
**Grid-spacing weights:** $\Delta V_j = V_{j+1} - V_j$ (forward diff.; last point repeated)

**Gaussian MPP emphasis**($w_{\mathrm{mpp}} = 2.0$, $\sigma_w = 0.1$ V):

$$w_j = 1 + (w_{\mathrm{mpp}} - 1) \exp\left(-\frac{(V_j - V_{\mathrm{mpp}})^2}{2\,\sigma_w^2}\right)$$

**$\Delta V$-weighted curve loss:**

$$\mathcal{L}_{\mathrm{curve}} = \frac{\sum_{j=1}^{N_V} \Delta V_j \, w_j (\hat{J}_j - J_j)^2}{\sum_{j=1}^{N_V} \Delta V_j \, w_j}$$




**Takeaway:** Resolution and weighting are intentionally concentrated where device-performance sensitivity is highest.