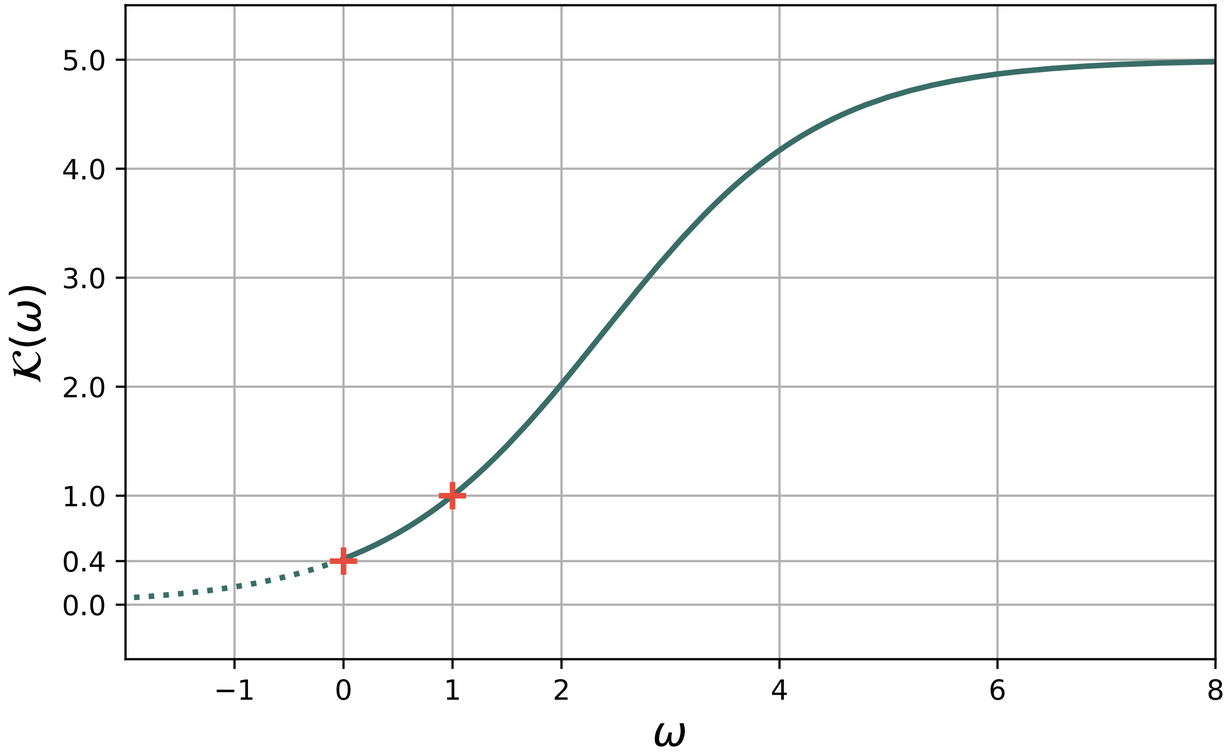
# Adaptive Loss Weight v2

Problem: Double effects of deceleration: exponential decay + weight

Proposal: $$\mathscr{L}_{emb} = \mathscr{K}\left(\frac{\hat{\mathscr{L}}_{inter}}{\hat{\mathscr{L}}_{intra}}\right) \cdot \mathscr{L}_{inter} + \mathscr{K}\left(\frac{\hat{\mathscr{L}}_{intra}}{\hat{\mathscr{L}}_{inter}}\right) \cdot \mathscr{L}_{intra}$$




$$\mathscr{K}(\omega) = \frac{5}{1 + 4 \cdot \exp(1 - \omega)}$$

$$\mathscr{K}(0) = 0.4$$

$$\mathscr{K}(1) = 1$$

$$\mathscr{K}(+\infty) = 5$$

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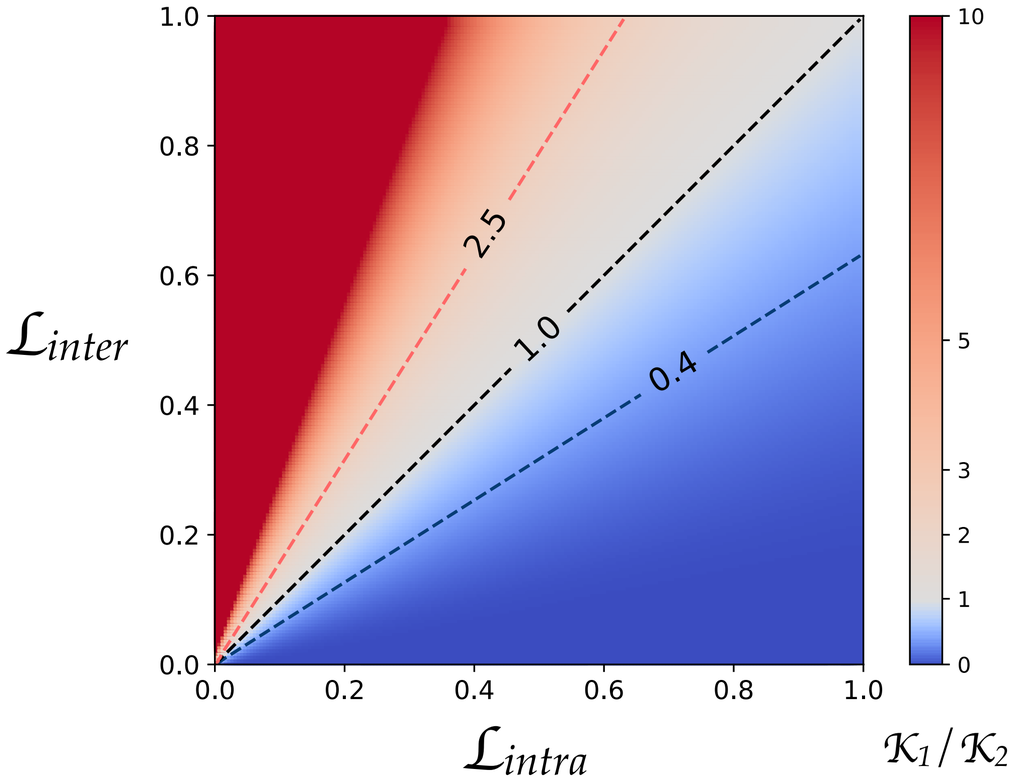


$$\mathcal{K}(\omega) = \frac{5}{1 + 4 \cdot \exp(1 - \omega)}$$

$\mathcal{K}_1 / \mathcal{K}_2$ *(ratio of weights)*

$$= \mathcal{K}\left(\frac{\hat{\mathcal{L}}_{inter}}{\hat{\mathcal{L}}_{intra}}\right) / \mathcal{K}\left(\frac{\hat{\mathcal{L}}_{intra}}{\hat{\mathcal{L}}_{inter}}\right)$$