High-genus solutions with dressing

Set:

- $\alpha_1 = 0$
- $\beta_1 = \beta > 0$
- $\alpha_{g+1} = \alpha > \beta$

Suppose:

- ρ is a positive, continuous probability density on $[\beta, \alpha]$
- $w_2, \ldots, w_g$ are positive
- Define $\alpha_2, \ldots, \alpha_g$ and $\beta_2, \ldots, \beta_g$ through

$$\int_\beta^{\alpha_j} \rho(t)\mathrm{d}t = \frac{j-1}{g}, \quad \int_\beta^{\beta_j} \rho(t)\mathrm{d}t = \frac{j-1+w_j}{g}.$$

- $w_j = v(\beta_j)$ for v continuous on $[\beta, \alpha]$.

Uniform bands and gaps

An example:

$$\int_{\beta}^{x} \rho(t)\mathrm{d}t = \frac{\beta - x}{\alpha - \beta}, \quad w_j = \frac{1}{2}.$$