Note

$$\tau'_\alpha = \frac{\mathrm{dE}(v|u>\alpha)}{\mathrm{d}\alpha} = \frac{\mathrm{d}}{\mathrm{d}\alpha}\frac{\mathrm{E}\left\{v(u>\alpha)\right\}}{1-\alpha} = \frac{\tau_\alpha - \mu_\alpha}{1-\alpha} \ , \quad \mu_\alpha \equiv \mathrm{E}(v|u=\alpha) \ .$$

Hence $\mu_\alpha = \tau_\alpha - (1-\alpha)\tau'_\alpha$ and τ_α is monotonic if μ_α is monotonic.

Suppose τ_α is given on a equispaced grid of $[0,1]$, with values denoted $\tau_0, \tau_1, \ldots, \tau_{n-1}$. Then the copula can be simulated using

$$v_i = \hat{\mathrm{P}}\{\Phi^{-}(\mu_i) + \epsilon_i\}] \ , \quad \epsilon_i \sim N(0, \sigma_i^2) \ , \quad \mu_i = \tau_i - (n-i)(\tau_i - \tau_{i-1})$$

with $\tau_0 = 1/2$, $\sigma_i =?$. Here $\hat{\mathrm{P}}$ computes the empirical percentiles and ensures the empirical distribution of the v_i is uniform.