On deflections of a prismatic shell exponentially cusped in the $N = 0$ approximation of I. Vekua's hierarchical models

Bending problem of prismatic shell with the thickness as follows

$$h = h_0 e^{-\kappa(x_1^2 + x_2^2)}, \quad h_0 = const > 0, \quad \kappa = const \geq 0, \quad x_1 \in (-\infty, +\infty), \quad x_2 \geq 0,$$

is investigated. The solution of the posed boundary value problem is given in an explicit form.

Static problem of the prismatic shell with the following thickness

$$h = h_0 e^{-\kappa x_2}, \quad h_0 = const > 0, \quad \kappa = const \geq 0, \quad x_1 \in (-\infty, +\infty), \quad x_2 \geq 0,$$

is investigated as well.