

On the solution of some equations with K -correction

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We consider some methods of approximate solution of nonlinear boundary problems for beams and plates. The accuracy of this methods is studied. One of the problems has the form[1-3]

$$u_{tt}(x,t) + \delta u_t(x,t) + \gamma u_{xxxx}(x,t) + \alpha u_{xxxx}(x,t) - \left(\beta + \rho \int_0^L u_x^2(x,t) dx \right) u_{xx}(x,t) - \sigma \left(\int_0^L u_x(x,t) u_{xt}(x,t) dx \right) u_{xx}(x,t) = 0, \\ 0 < x < L, 0 < t \leq T, \\ u(x,0) = u^0(x), u_t(x,0) = u^1(x), u(0,t) = u(L,t) = 0, u_{xx}(0,t) = u_{xx}(L,t) = 0,$$

where $\alpha, \gamma, \rho, \sigma$ are positive and where β and δ are unrestricted in sign.

ლიტერატურა

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