

BeamElement
A Asy Asz Dimension : int E ElementSize G Ip It Iy Iz L LocalSize NumberOfNodes : int Py : float Pz : float ReferenceCoords current_deformation : ndarray domain_size index isNonlinear material_params nodal_force_global : ndarray nodal_force_local : ndarray nu previous_deformation : ndarray rho  evaluate_relative_importance_of_shear() evaluate_torsional_inertia() get_element_mass_matrix() get_element_stiffness_matrix()

BernoulliBeamElement
G Py : float Pz : float  evaluate_relative_importance_of_shear()

CRBeamElement
Bisector : ndarray IncrementalDeformation : ndarray Kd_mat : ndarray Ke_mat : ndarray LocalReferenceRotationMatrix : ndarray LocalRotationMatrix : ndarray Psi_y : float Psi_z : float Quaternion TransformationMatrix : ndarray VectorDifferences : ndarray nodal_force_global : ndarray nodal_force_local : ndarray phi_a : ndarray phi_s : ndarray rA_sca : float rA_vec : ndarray rB_sca : float rB_vec : ndarray v : ndarray  build_single_mass_matrix(Phi, CT, CR, L, dir) get_element_mass_matrix() get_element_stiffness_matrix() update_incremental(dp) update_total(new_displacement)

TimoshenkoBeamElement
get_element_mass_matrix()