

Complex Rigid-Plastic Deformation Model of Tow Degree of Freedom Mechanical System under Impulsive Force

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Abstract : In order to study the plastic resource of structures, the elastic-plastic single degree of freedom model described by Prandtl diagram is widely used. The generalization of this model to tow degree of freedom beyond the scope of a simple rigid-plastic system allows investigating the plastic resource of structures under complex disproportionate by individual components of deformation (earthquake). This macro-model greatly increases the accuracy of the calculations carried out. At the same time, the implementation of the proposed macro-model calculations easier than the detailed dynamic elastic-plastic calculations existing software systems such as ANSYS.

Keywords : elastic-plastic, single degree of freedom model, rigid-plastic system, plastic resource, complex plastic deformation, macro-model

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