

Some Techniques for Solving “Stiff” Equations

Author(s): Victor-Octavian Roşca

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Abstract text:

The Structural Dynamics involves a large amount of computational effort. Most dynamic structural models require the solution of a set of 2nd order differential equations. There are developed integration techniques for the 1st order and 2nd order differential equation. The 2nd order set of equations is submitted to a transformation [12] in order to obtain the first order system. This paper deals with the “stiff” systems of 1st order differential equations. From the physical point of view the stiff system consists of two components – one with a fast dynamic behavior and other one, slow. The ignoring of high frequency component may lead the wrong results. There are presented some advanced solution methods, criteria for choosing the appropriate techniques and a case study.

Key Words:

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Author(s) Information

Victor-Octavian Roşca

Affiliation: „Gheorghe Asachi” Technical University, Jassy, Department of Structural Mechanics.

Email: vrosca@ce.tuiasi.ro

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