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Simplified Damping Modification Factor for Vertical Response Spectra

Ravi Kanth Sriwastav[1], Dhiman Basu[2]

[1]Graduate Student, Department of Civil Engineering, Indian Institute of Technology Gandhinagar, India
[2]Associate Professor, Department of Civil Engineering, Indian Institute of Technology Gandhinagar, India

Abstract

Damping modification factor of vertical response spectra (DMFV) for 1%, 2%, 8% and 10% damping levels with that at 5% of the critical is explored for a period range of 0 ~ 4.0sec. The dependence of DMFV on seismological parameters (magnitude, epicentral distance and soil type) is studied and is shown to be weak and insignificant for practical purposes. Simplified relation for computing DMFV as a function of the period is proposed irrespective of any seismological parameters.

Keywords: Vertical earthquake shaking, Damping modification factor