

Brief Report of 17th Symposium on Earthquake Engineering, 43rd ISET Annual Lecture and 52nd ISET Annual General Meeting

Department of Earthquake Engineering, IIT Roorkee and Indian Society of Earthquake Technology (ISET) were jointly organized the 17th Symposium on Earthquake Engineering (17SEE), from November 14-17, 2022 at IIT Roorkee. In this Symposium 300 plus delegates representing several Government/Semi-Government Organizations/Institutions, International Universities, Regional Engineering Colleges, Private Organizations, NGOs, and other individual experts participated and shared their work and thoughts. In total 251 papers were



accepted for the Conference and 230 presentations took place in 47 technical sessions, which included 35 keynote lectures. The Proceedings of this Symposium are being published through Springer.

During the symposium, ISET has also organized the 43rd ISET Annual Lecture, the 52nd ISET Annual General Meeting, Honorary Fellowships, and the ISET Awards ceremony. **Prof. Vinay K. Gupta**, Department of Civil Engineering, I.I.T. Kanpur delivered the ISET Annual Lecture entitled '**Recent Developments in Response Spectrum-Based Modal Combination Rules**' on November 15, 2022 in Jai Krishna Hall, The Institution of



Engineers (I), Roorkee Local Centre, Roorkee. Prof. T.G. Sitharam, President, ISET presided over the function.

Prof. B.K. Maheshwari, Vice-President introduced the eminent speaker. The abstract of the Lecture is given below:

The estimation of peak linear response via elastic design (response) spectra continues to form the basis of the earthquake-resistant design of structural systems in various codes of practice all over the world, and it is common to use the design pseudo spectral acceleration (PSA) spectrum characterizing the seismic hazard at the site of the structure together with a response spectrum-based modal combination rule for this purpose. Many response spectrum-based formulations of peak linear response also require the input of the spectral velocity (SV) ordinates consistent with the specified seismic hazard in order to account for modal correlations in a simple manner. To this end, SV ordinates have been conventionally approximated as pseudo spectral velocity (PSV) ordinates. However, the PSV ordinates are known to be close to the SV ordinates only over the intermediate frequency range coinciding with the velocity-sensitive region. The PSV approximation may lead to large overestimation errors when the structure is stiffer to the ground motion. Also, at long periods, PSV ordinates underestimate the SV ordinates. Due to these limitations, the use of PSV approximation for the SV ordinates has been largely avoided and alternative means involving the moments of power spectral density functions have been employed, thus increasing the complexity of the response spectrum-based modal combination rules. It is also quite uncommon to use the relative spectral acceleration (RSA) ordinates in the response spectrum-based modal combination rules, and thus little attention has been paid to the estimation of RSA ordinates consistent with the specified design PSA spectrum. These ordinates may be required in the estimation of peak floor accelerations, which are useful for ensuring the safety of rigid nonstructural components in structural systems.

This lecture focuses on the estimation of the SV and RSA ordinates directly from a design PSA spectrum. It will also be shown how the proposed approximations can be used in the response spectrum-based modal combination rules to estimate peak linear responses while avoiding the tedious calculations of spectral moments and still not ignoring any modal correlations.

Prof. Vishwas A. Sawant, Secretary, ISET proposed a vote of thanks. The Annual Lecture was attended by a large number of Faculty, Engineers, Academicians, and Students. The 43rd ISET Annual Lecture was followed by the 52nd Annual General Meeting at the same venue. The glimpses of the events can be viewed at <https://iset.org.in/gallery>.

Online Application for ISET Membership

The homepage of the Society has been updated and a new online membership platform has been created to facilitate joining of new members. For applying membership online, please log on to: <https://www.iset.org.in/signUpUserForm>

The screenshot shows a web browser window displaying the 'Sign Up Form' for the Indian Society of Earthquake Technology (ISET). The page header includes the ISET logo and name, along with contact information: Tel: 0091-1332-284491, Email: office@iset.org.in. The navigation menu includes Home, About Us, Office Bearers, Events & Activities, Publications, Membership, Forums, Gallery, Contact, and Sign Up/Login. The main content area features a 'Sign Up' button and a 'Login' button. Below these is a 'Sign Up Form' with the following fields: Email (admin), Password (masked with dots), and Confirm Password (masked with dots). A red error message 'Password Mismatch' is displayed below the Confirm Password field. There is also a 'I'm not a robot' checkbox and a 'Submit' button. The footer contains 'Quick links' (Forums, Member Login, ISET Journal, ISET Annual Lecture, Symposia, 6th WCEE, 7th RAGEE, Donate now), 'Contact Us' (Secretary, Indian Society of Earthquake Technology, Earthquake Engineering Department Building, Indian Institute of Technology Roorkee, Roorkee-247 667, Uttarakhand, INDIA, Tel: 0091-1332-284491, Fax: 0091-1332-284491, Email: office@iset.org.in, iset@itr.ac.in), and a map. The page is copyrighted ©2020.