SRINIVAS UNIVERSITY

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RESEARCH CENTRE FOR ANALYSIS OF STRUCTURES BY FINITE ELEMENT METHOD AND FOUNDATION ENGINEERING

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The future of Finite Element Method is bright. The applications of Finite Element Method are just starting to reach its potential. One of the most exciting prospect is its application to coupled problems like Fluid-structure interaction, thermo-mechanical, thermo-chemical, thermo-chemo-mechanical problems; bio-mechanics & bio-medical engineering; piezoelectric, ferroelectric, electromagnetics etc. In reality, to simulate nature, we need to be able to solve coupled problems. This is where the exciting problems are today. One of the other exciting area is in 3D printing. There has been a huge impetus in the computational mechanics community for simulation of 3D printing processes. Again, 3D printing is a complex process that involves phase changes, thermal interactions etc. It's again a coupled problem. Dynamic machine foundation codes generally use the fundamental period of foundation to assess their response to dynamic loading. This parameter is generally calculated using empirical formulas provided by the codes. These formulas generally ignore the so flexibility, which could drastically affect the fundamental period and consequently their overall dynamic response. This paper includes an investigation of the influence of the soil structure interaction on the fundamental period of dynamic foundations. The behaviour of both the soil and the foundation is assumed to be elastic. The soil foundation system is modelled using viscous -spring artificial boundary. Analysis shows that the influence of the SSI on the fundamental frequency of dynamic foundation depends on the soil foundation relative rigidity. The SSI should not be ignored when the rigidity of the foundation is large enough.

Members:

1. Mr. Bhavani Shankar

2. Mr. Ravi Kiran

Journal Publications:

- Journal paper entitled "Comparative Study on Seismic Analysis of Soil Structure Interaction with Various Soil Properties by Varying Floor Levels" has published in International Research Journal of Engineering and Technology, Volume 3 Issue 10 October 2016.

- Journal paper entitled "To Study the Behavior of Partial and Full Replacement of Fine Aggregate using Quarry Dust and Full Replacement of Course Aggregate by Recycled Concrete Aggregate" has published in International Research Journal of Engineering and Technology, Volume 4 Issue 1 January 2017.

- Journal paper entitled "Study on Geopolymer Concrete using GGBS" has published in International Research Journal of Engineering and Technology, Volume 4 Issue 2 February 2017.

- Journal paper entitled "Comparison of Soil Structure Interaction for Regular and Irregular Buildings with Differing Floor Levels and Soil Stratum" has published in International Research Journal of Engineering and Technology, Volume 4 Issue 7 July 2017.

- Journal paper entitled "Study on Behavior of Diagrids under Seismic Loads Compared to Conventional Moment Resisting Frames" has published in International Research Journal of Engineering and Technology, Volume 4 Issue 8 August 2017.

- Journal paper entitled "Study on Effects of P-Delta Analysis on RC Structures" has published in International Research Journal of Engineering and Technology, Volume 4 Issue 8 August 2017.

- Journal paper entitled "Experimental study of RC Framed Building on Sloping Topography Subjected to Seismic Forces" has published in International Research Journal of Engineering and Technology, Volume 5 Issue 5 May 2018.

- Journal paper entitled "Analysis and Evaluation of Commercial and Residential building (G+5) by using Staad.Pro" has published in International Research Journal of Engineering and Technology, Volume 5 Issue 6 June 2018.

- Journal paper entitled "Comparative Study on Seismic Analysis of Two RC Buildings with Irregularities under Varying Seismic Zones" has published in International Research Journal of Engineering and Technology, Volume 5 Issue 7 July 2018.

- Journal paper entitled "Comparative Study on Seismic Analysis by Considering Shear Wall and Optimization Techniques for Varying Floor Levels" has published in International Research Journal of Engineering and Technology, Volume 5 Issue 7 July 2018.