



11 Dec 2014

Forum for Promotion of Soil Dynamics in India

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Recommended Citation

Prakash, Shamsher, "Forum for Promotion of Soil Dynamics in India" (2013). *Forum for Promotion of Soil Dynamics in India*. 2.

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FORUM FOR PROMOTION OF SOIL DYNAMICS IN INDIA

SHAMSHER PRAKASH

EMERITUS PROFESSOR

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY– ROLLA

INTRODUCTION

- There was a time in 1970's when we had taken a lead in developing research projects in Bangalore, Roorkee and other centers in India, on:

Liquefaction of Sands with Fines,

Displacements of rigid retaining walls under seismic condition,

Design of piles under earthquake conditions,

In-situ soil properties determination for machine foundations,

Seismic design, and

Many more.

We have lagged behind at this time on the recent advances in Soil Dynamics.

- In order to PROMOTE this ACTIVITY in India it is proposed to appoint the FORUM as above.

History of Development of Soil Dynamics in India 1960 - 1981

a) Indian Institute Of Sciences, Bangalore

Leader: N.S. Govinda Rao

Low Strain Problems, Eg: Machine Foundation

b) School of Research and Training in Earthquake Engineering (1962)

All aspects of Soil Dynamics and Geotechnical Earthquake Engineering

Major Contributions

1. DISPLACEMENT BASED DESIGN OF RIGID RETAINING WALLS

(*NANDKUMAR, 1973*)

We were at least 10 years ahead in this area as compared to the rest of the world.

Piles Under Dynamic Loads

- a) Natural Frequency of Piles
(Chandrasekar, 1973)
- b) Effect of Vertical Vibrations of Penetration of Piles
(M.S. Ghumann, 1981)
- c) Effect of Pile Embement on Natural Frequency
(S.L. Agarwal, 1967)
- d) Pile Foundations Under lateral Dynamic Loads
(V. Chandrasekar, 1973; H.D. Sharma, 1969)
- e) Natural Frequency of Pile Groups
(L.P. Gupta, 1970)

Liquefaction

- Liquefaction of Sand With Fines

(M.K. Gupta, 1979, 1967, 1968)

- Liquefaction of Silts

(Tenughat Sand, Ukai Sand, Farrakka Sand)

First Graduate Course Anywhere on “Soil Dynamics”

-1964 in Roorkee

First Comprehensive Text on “Soil Dynamics”

(McGraw-Hill book 1981)

First Soil Dynamics Lab and Model
Testing Facility for Models of
Earth/Rock Fill Dams, Retaining Walls,
Piles in Roorkee
(1970)

Leader In Developing Codes of Practice

- Design Against Earthquake
(IS--1893-1972)
- Machine Foundation, Reciprocating machines, Hammers
(1972 onwards)
(ISI, Bureau of Indian Standards)

Visit to SWANSEA Conference (1972)

- Liquefaction of Sands with Fines
- Vibration Isolation below the Odeon cinema in London
- Pioneering work of Crockett and Hammond in vibration absorption
- And many others

Draft Agenda

- Welcome by the Chair – Banerji
- Introduction of the Forum – Shamsheer Prakash
- Presentation of Reports
 - a) Short Courses 2014-2016 , Amit Prashant, IITGN
 - b) Personnel on Soil Dynamics in the Country BK Maheshwary IITR

- c) Vision on Soil Dynamics 2014-2019, and 2020-2025
1. HR Wason, *IITR/ISET*
 2. Sudhir Jain/Amit Prasant, *IITGN*
 3. Deepankar Chowdhary, *IITB*
 4. GV Ramana, *IITD*
 5. VK Puri, *USA*
 6. TN Gupta, *Delhi*
 7. Amir Kaynia, *NGI*
 8. Ikou Towhat, *Japan*
 9. Pedro Pinto, *Portugal (In Absentia)*
 10. BK Maheshwary, *IITR*
- d) Plan of Conference on Soil Dynamics in 2015 or about, HR Wason ISET/IITR will lead the discussion.

Deepankar Chowdhary, GV Ramana, and others may comment.