

رتبه سوم خارجی
Foreign Third Winner

Project Title:
Reliability Analysis and Control of
Structures for Dynamic Loading

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Country:
India

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عنوان طرح:
بررسی قابلیت اعتبار و نظارت بر ساختارهای
بارگیری دینامیک

محقق:
دکتر توشار کانتی داتا

کشور:
هندوستان

دانشگاه:
مؤسسه فناوری هند

Abstract:

The project deals with the reliability analysis and control of some important structures subjected to wind, wave and earthquake forces. Therefore, the project is highly relevant to natural disaster mitigation programme. These three dynamic excitations being random in nature, the first part of the work deals with the application of random vibration analysis techniques for solving a wide range practical problems such as seismic response of pipelines, dynamic response of flexible offshore structures, seismic response of building and bridges, wind induced vibration of towers, chimneys and bridges etc. The applications require development of solution techniques for complex fluid-structure and soil-structure interaction effects, treatment of nonclassically damped system for single and multi point random excitation and consideration of material and geometric nonlinearities. The second part of the project is aimed at the development of reliability estimates of structures subjected to above class of dynamic excitations. It uses the results of the first part of the study for formulating the first order and second order reliability analysis techniques. The third part of the project provides extensive studies on both passive and active control of structures.