PROJECTS : AN OUTLINE

R & D Projects

Sponsored Projects

1. Ocean modelling - Phase II; DOD.
2. A neural network based atmospheric prediction system; DST.
3. Determination of material properties of road pavement component layers from surface measurements-development of mathematical model and software; DST (Collaborating lab: CRRI).
4. Modelling of biogeochemical processes in upper ocean; DOD.
5. Genesis, intensification and early warning of Bay of Bengal cyclones; DST.
6. Development of a model for ash distribution in Indian coals; CFRI.
7. Determination of crustal deformation in the Indian Eurasian Plate - Quantification of strain accumulation in and across the Himalayas and mechanism of continental tectonics; NSF.
8. Crustal deformation of the Southern Indian Peninsula - A search for seismogenic zones and modelling of its deformation mechanism; DST.

Collaborative projects

1. Investigating strain fields in zones of recent seismicity in southern peninsular India (with NGRI, Hyderabad).
2. Nondeterministic modelling of earthquake processes (with NGRI, Hyderabad).
3. Dynamics of Indian oceanic lithosphere (with NIO, Goa).
4. Atmospheric photochemical modelling to study the global change and remote computing (with NPL, Delhi).
5. Computer aided chemistry (with IICT, Hyderabad).
6. Analysis of molecular dynamics simulation (with IICT, Hyderabad).
7. Mathematical modelling of the pacemaker action potential in heart (with CDRI, Lucknow).
8. Development of software package for chaos game representation of DNA/RNA/protein sequences (with IICB, Calcutta).
9. Prognostic modelling of landslides (with CBRI, Roorkee).
10. Strength contours of leather surfaces (with CLRI, Madras).
11. Computer aided design of tunnels (with CMRS, Dhanbad).
12. Determination of material properties of road pavement component layers from surface measurements - development of mathematical model and software (with CRRI, New Delhi).
13. Modelling of microsegregation during solidification of metallic alloys (with NML, Jamshedpur).
14. Simulation of bioremediation in hydrocarbon contaminated soil beds (with RRL, Jorhat).
15. Kinetic analysis of cephalosporin biosynthesis (with RRL, Jorhat).
16. Development of a model for ash distribution in Indian coals (with CFRI, Dhanbad).
17. Mathematical modelling for scientific and technological development (with NISTADS, New Delhi)

18. Application of nonlinear ray theory to: (i) unsteady sonic boom and (ii) seismic ray tracing (with IISc., Bangalore).
19. Finite element analysis of composite beams supporting walls (with Bangalore Univ.).
20. Modelling of the seismic structure of the Indian lithosphere (with Andhra Univ.).
21. Controlling and synchronization of chaos in certain nonlinear dynamical systems (with Bharatidasan Univ.).
22. Understanding neurodynamics using trans-spectral coherence of EEG data (with NIMHANS, Bangalore).

Inhouse Projects

1. Modelling stress in the Indian lithosphere and earthquake genesis
2. Stochastic analysis and modelling of time series data set.
3. Nonlinear/stochastic dynamical systems.
4. Industrial and geophysical computational fluid dynamics.
5. General budget of C-MMACS.
6. Development, operation and management of high performance computing and networking resources.