TECHNICAL TALK
(In collaboration with the Geology Department, University of Malaya)

To all members

Speaker:  **Dr. Kenji Satake**, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan

Title:  The Asian Tsunami Of 2004: Observations And Numerical Simulation

Venue:  Geology Lecture Hall (DKG), Geology Department, University of Malaya, Kuala Lumpur

Date:  Thursday, 25th May 2006

Time:  3:30 pm (tea)
       4:00 pm (talk)

**ABSTRACT:** The December 26, 2004, Sumatra-Andaman earthquake generated tsunamis that propagated across the Indian Ocean and caused the worst tsunami disaster in history. The tsunami was recorded in various ways; many scientists and engineers visited the affected coasts to survey the tsunami heights and to document the damage, the tsunami waveforms were instrumentally recorded by coastal tide gauges, and sea surface heights during the tsunami propagation in Indian Ocean were detected by altimeters on several satellites. The tsunami source can be modeled from earthquake fault parameters, and its propagation can be simulated by numerically solving shallow water (long wave) equations on actual bathymetry. The tsunami source can be also estimated by inverse modeling of tsunami data, by comparing the observed data with the simulated tsunamis.

**Additional information:** The numerical modeling of tsunami generated by earthquakes plays an important part in the Japanese Tsunami Warning System. Based on simulated tsunami generated using models, a large database of potential tsunami hazards for given earthquake locations and severity has been constructed, enabling the Japanese Meteorological Agency (JMA) to make tsunami hazard predictions within 3 minutes, and begin to issue tsunami alerts within 5 minutes of the occurrence of an undersea earthquake. A similar modeling effort is needed for the Indian Ocean Tsunami Warning System (IOTWS), which is currently being put into place.