

EARTH OBSERVATION SYMPOSIUM (B1)  
Interactive Presentations (IP)

Author: Mrs. Md Yusoff Siti Harwani  
Universiti Sains Malaysia, Malaysia

Ms. Mohd Rizal Nur Awatiff  
Malaysia

Dr. Norilmi Ismail  
Universiti Sains Malaysia, Malaysia

FEASIBILITY STUDY ON EARTHQUAKE MONITORING AND PRECURSOR RESEARCH IN  
SOUTH-EAST ASIA USING SPACE TECHNOLOGY

**Abstract**

There have been a few decades of studying, monitoring and observing the earthquake activity through a few techniques of ground-based, air-borne and space-borne all over the world. However, the related research performed in the Southeast Asia region is still lacking and need extensive methodology. The study and monitoring of the earthquake in Southeast Asia region as important as any study conduct all over the world because the earthquake and tsunami as will affect Indonesia, Malaysia, Thailand and Singapore and leave impacts to socio-economic to the country respectively. It is crucial for the country like Indonesia that placed in 'Pacific ring of Fire' and neighborhood countries like Malaysia and Singapore to have their planning in prediction and preparation to avoid massive damage due to the earthquake and tsunami. Current technology in Cube sat will make developing countries in Southeast Asia region play the notable role in disaster management and monitoring specifically for the earthquake and tsunami event. Firstly, this study is conducted by gathering data of earthquakes activity in Southeast Asia region from 1996 to 2016. The data related to earthquake precursors such as peak density,  $f_0f_2$  and Total Electron Content (TEC) in the ionosphere are collected and analyzed to observe the correlation between ionosphere behavior and seismic activity. The data are collected from ionosonde ground base station near-equatorial region. Next, possible technology will be discussed to enlist a few sensors that will be mounted on the satellite for ionosphere study. Since Southeast Asia region is normally covered by cloud and sometimes haze, imaging in visible spectrum maybe not the best solution for monitoring purpose. The result from this study hopefully should lead to an improvement and advancement of space technology utilization for earthquake precursor over the Southeast Asia region, specifically.