

A proposed seismic array surrounding the South China Sea and its potential scientific achievement

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Experience from the 1994 giant Sumatra earthquake, seismic and tsunami hazard have been considered as important issues in the South China Sea and its surrounding region, and attracted many seismologist's interesting. Currently, more than 25 broadband seismic instruments are currently operated by Institute of Earth Sciences, Academia Sinica in northern Vietnam to study the geodynamic evolution of the Red river fracture zone and rearranged to distribute to southern Vietnam recently to study the geodynamic evolution and its deep structures of the South China Sea. Similar stations are planned to deploy in Philippines in near future and first station has been installed on May 2010. In planning, some high quality stations may be left as permanent stations and added continuous GPS observations, and instruments to be maintained and operated by several cooperation institutes, for instance, Institute of Geophysics, Vietnamese Academy of Sciences and Technology in Vietnam and Philippine Institute of Volcanology and Seismology in Philippines. Finally, those stations will be planed to upgrade as real time transmission stations for earthquake monitoring and tsunami warning. All collected data will be processed in data center of the Institute of Earth Sciences, Academia Sinica for open access. Efforts from this data service may greatly improve seismic network performance of the South China Sea. These data will be parallel transfer in real time through internet to provide countries surrounding the South China Sea to form virtual networks for regional earthquake and tsunami monitoring. Implementation may assistant development of earthquake research, monitor and natural hazard reduction of this region. In the near future, we will search for new cooperation continually from the surrounding countries of the South China Sea to install new seismic stations to construct a complete seismic network of the South China Sea and encourage studies for earthquake sciences and natural hazard reductions.