

Development of a new tsunami detection system using RTK-GPS - an experiment off Ofunato -

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A new tsunami observation system has been developed, which employs the real-time kinematic (RTK)-GPS technique to detect a tsunami before it reaches the coast. A new buoy was developed which equips power supply, tiltmeter, ultrasonic distance measurement system for draft line monitoring etc. as well as GPS sensor. The buoy was anchored at about 2km away from the coast of Ofunato city, northeastern Japan, since January 23rd, 2001. The estimated buoy position is transmitted to the city hall and the fire station of the city for real time monitoring. Data can also be watched and downloaded through web page (<http://tsunami.ekankyo21.com/>) with about 30 minutes of delay.

A new tsunami observation system has been developed, which employs the real-time kinematic (RTK)-GPS technique to detect a tsunami before it reaches the coast. The system consists of a GPS buoy, data acquisition system, data processing system and the monitoring system of the estimated position of the buoy. A new buoy was developed which equips power supply, tiltmeter, ultrasonic distance measurement system for draft line monitoring etc. as well as GPS sensor. The buoy has been anchored at about 2km away from the coast of Ofunato city, along the Sanriku coast, northeastern Japan, since January 23rd, 2001. Reverse RTK processing for one second sampling data is conducted at the base station and the estimated position of the buoy is further transmitted to the city hall and the fire station of the city for real time monitoring. Data can also be watched and downloaded through web page (<http://tsunami.ekankyo21.com/>) with about 30 minutes of delay. The experiment will be continued until next January and various tests such as accuracy check, long-distance RTK and feasibility study of detecting tsunami will be conducted. Combination of this system with an appropriate warning system will provide a powerful tool for mitigating tsunami hazard.