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The Adriatic meteotsunami research and warning network

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Destructive meteotsunamis (atmospherically induced long ocean waves in a tsunami frequency band) are known to sporadically hit some of the Adriatic Sea harbours and bays. Especially endangered are well populated middle Adriatic harbours Stari Grad on the island of Hvar and Vela Luka on the island of Korčula. A meteotsunami research and warning network has been designed and implemented for these two harbours. Pilot network consists of three microbarograph stations, at which air pressure is measured with one second resolution. Stations normally transmit data once every hour. All data is saved in Oracle data base for subsequent analysis and archiving. Nonetheless, once an air pressure disturbance with a tendency exceeding a threshold tendency is observed at one of the stations, all three stations enter a burst mode, and start transmitting data instantaneously. Providing that an air pressure disturbance is detected at all three stations, angle and speed of propagation of that disturbance are instantly estimated. Angle and speed of propagation are estimated from the arrival times of the disturbance at different stations, using a least square fit method. Based on propagation parameters (tendency, speed and angle) of the disturbance, an adequate warning is issued for the area. To obtain a fully functional warning and research network an installation of tide gauges and open sea buoys is still needed.