

Method of high accuracy and short computing time automatic P wave Picking with taking into account the waveform characteristic

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We have developed an automatic system determining earthquake parameters with using only a few P wave arrival times. The system is under operating and broadcasts earthquake information before S wave arrivals to areas of more than 30 km off distance. In the present study, We developed a new method of P wave picking used in the automatic system. The new method can measure accurate P wave arrival times with short computing times. The method define a simple function of measuring P wave onset times. It is composed of several coefficients indicating the characteristics of noise and earthquake waveforms. Initially, the parameters are experimentally defined and they are adjusted by using computed result. It was found from the comparison of P wave arrival times measured manually that it can measure onset times with accuracy of 0.1sec, 0.2sec and 0.4 sec for 85%, 93% and 97 %, respectively.