Utilization of Early Earthquake Warning as Updating Information

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The disaster-prevention system using Early Earthquake Warning computes arrival times of S waves and seismic intensities at target points from focal parameters: the location, origin time and magnitude data of an earthquake occurred. Early Earthquake Warning is now tentatively delivered from the Japan Meteorological Agency (J.M.A.). The calculation result is used to decide automatic or half-automatic control items such as stopping or slowing down elevators or fuel suspension for preventing fire before S-wave reach.

It is effective to estimate margin times for S-wave arrival and the intensity of earthquake motion in order to design the control system. The delay time for data communications and processing should be considered because there is little time left to utilize the information as an early warning announcement before the arrival of seismic waves.

We also need to consider that the renewal information is transmitted with seismic wave propagations as Early Earthquake Warning. Judgments by initial information are needed when margin times to the S-wave arrival are short, although they sometimes have inadequate accuracy about focal parameters. In this study, we examine effective methods to utilize these warnings having a characteristic of updating information for mitigating seismic hazards.

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