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Scientists develop earthquake alert system

LOS ANGELES - Scientists working in Southern California have proposed a way of interpreting feeble tremors which herald a large earthquake, a step that could help in providing advance warning.

The system could theoretically give anywhere from seconds to tens of seconds of advance notice - enough time to send schoolchildren diving under their desks or to cut the flow of gas through pipelines vulnerable to rupture, scientists said.

Details appeared yesterday in the journal Science.

Similar systems are already used in California and Japan on a smaller scale.

The latest system would not predict or forecast earthquakes but interpret the staggered way in which a quake's energy travels to the surface.

The first indication at the surface that a large earthquake has occurred is typically the jolt caused by the arrival of a fast-moving but low-energy wave called the primary or P wave.

It is followed by the more energetic but slower-moving S or shear wave that causes far more violent shaking.

Mr Richard Allen of the University of Wisconsin-Madison and Mr Hiroo Kanamori of the California Institute of Technology developed a way to determine the location, origin, time and - most importantly - magnitude of an earthquake from as little as four seconds of measurements of the P wave.

The system would rely on seismic instruments already deployed across the

greater Los Angeles region.

'If we can detect this P wave and use the information contained in it to estimate the hazard associated with an earthquake, then there is the potential to issue a warning before any significant ground motion reaches the surface,' Mr Allen said.

The amount of forewarning would depend on the distance of the sensors from an earthquake's epicentre.

The system is now being tested on the regular earthquakes in the Los Angeles region.

However, there are no immediate plans to develop an actual warning system. -- AP

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