

The improvement for precise earthquake location determined by Japan Meteorological Agency (Part. 3)

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In October 2001, JMA updated the velocity structure model from 83A to JMA2001 for hypocenter determination and focal mechanism estimation, and data weight for hypocenter determination. The updated focal parameters and nodal plane solutions using the new velocity structure model and data weight since October 1997 were published in 'The Annual Seismological Bulletin (CD-ROM)' and uploaded to the FTP site. In this study, we will evaluate updated hypocentral distributions in comparison with the old one.

* Examples of remarkable change in hypocentral distributions trend

Aftershocks distribution of the Geiyo earthquake in 2001: old hypocentral distribution showed vertical or slightly eastward inclination, whereas, new hypocentral distribution shows westward inclination.

Aftershocks distribution of earthquake occurred in Mid Kyoto Pref. (2001/08/25 Mjma5.1): old hypocentral distribution showed faded vertical trend, whereas, new hypocentral distribution shows rather sharp conjugate trend, in accordance with the estimated focal mechanism.

* Changes in standard error of hypocenter location

For shallow earthquakes in inland, the averages of horizontal and vertical standard error were approximately 0.6km and 1.4km in old determination and were improved to approximately 0.4km and 0.9km in new determination.

The depth estimation stability including air-focus problem and its countermeasures are also considered.