# Epicenter correction of earthquakes in Matsushiro Seismic Array System by spline function

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We determine the hypocenter of earthquakes all over the world by a combination of the azimuth and epicentral distance by the seismic array system at Matsushiro Seismological Observatory. But the azimuth and epicentral distance have systematic error caused by the heterogeneity of the velocity structure of the Earth. So we correct the estimated locations by liner interpolation, but the modified locations are biased because this procedure doesn't use the smooth function. We developed the new program for correction of earthquake location using the spline function determined by the data of differences our epicenters from earthquake catalogs from USGS and JMA.

Using the new program, we could obtain the better distribution of the epicenters than the old one.

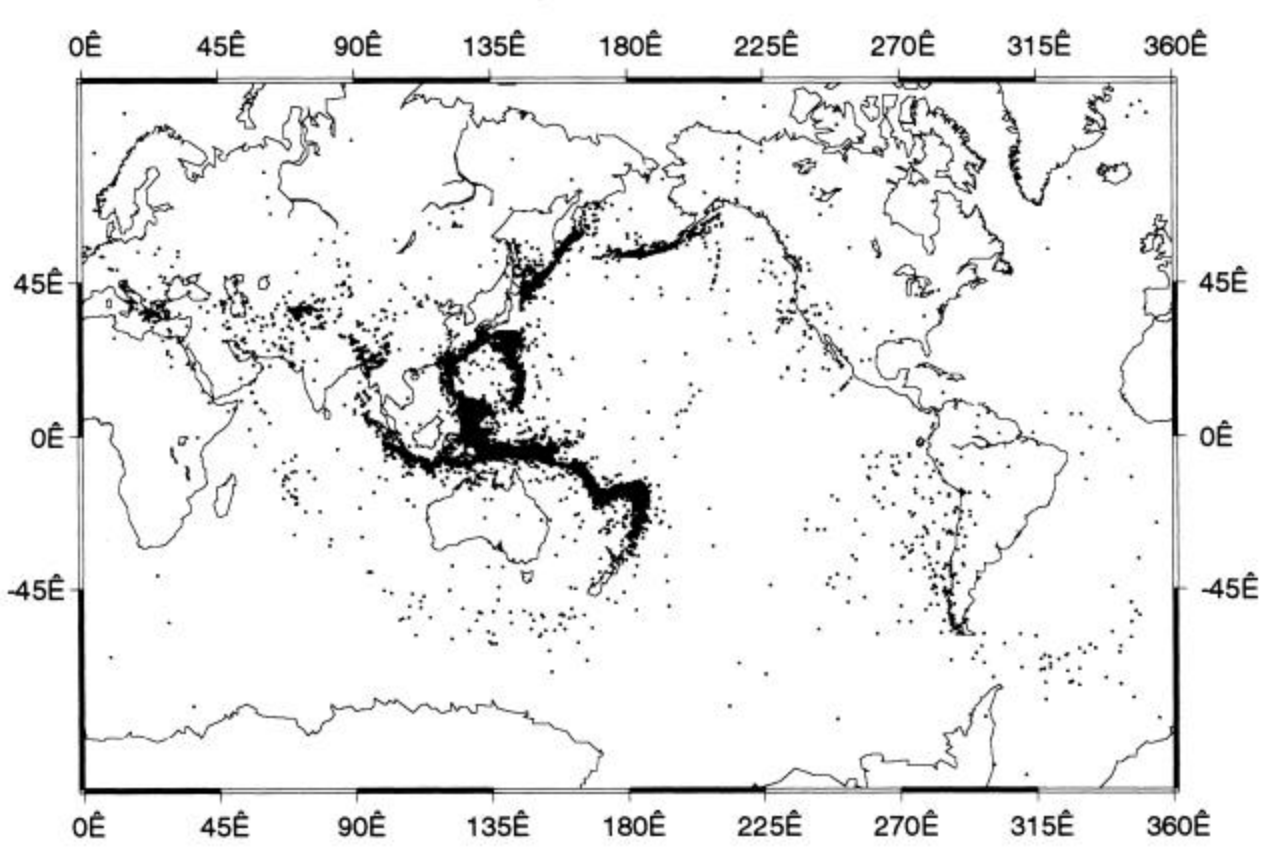


図１．従来用いられた補正法で震央位置補正がされた震央分布

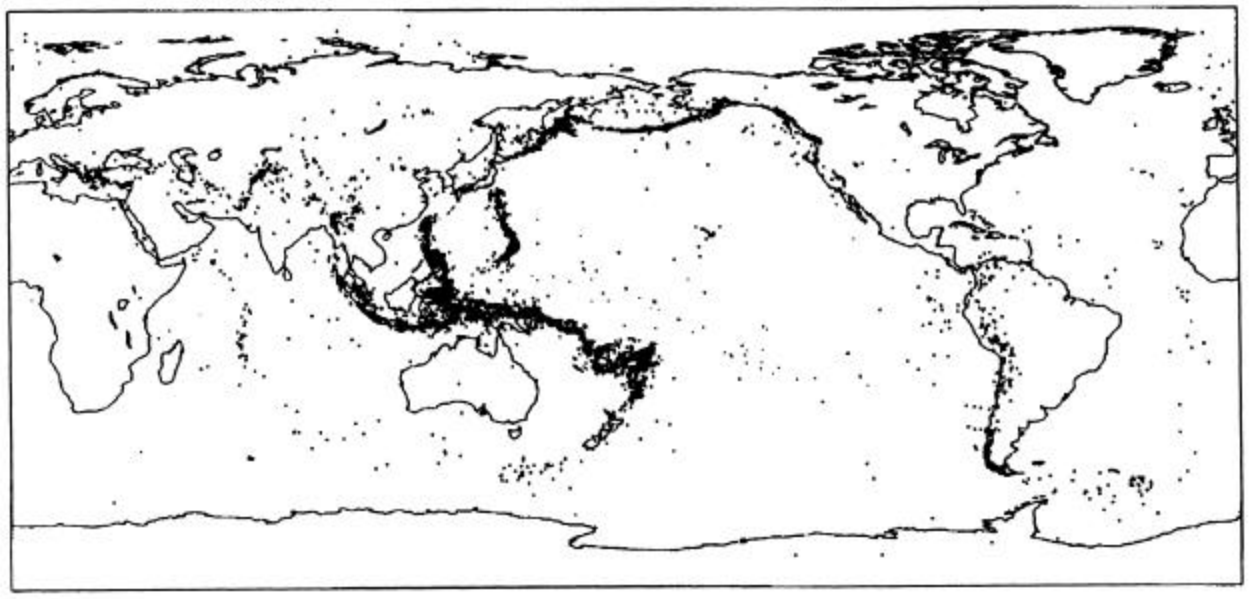

図２．今回のスプライン関数を利用した補正法で震央位置が補正された震央分布