An Evaluation of Anisotropic Mapping Function using JMA 10km Spectral Model Data - Part 3-

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Several anisotropic mapping functions are available for the GPS and VLBI analysis. Chen and Herring (1997) have demonstrated good agreement between horizontal gradient parameters estimated using their mapping function and the NCEP (National Center for Environmental Prediction) analysis field. However, the utility of this anisotropic mapping function has not been evaluated with respect to mesoscale phenomena because the NCEP analysis field has insufficient horizontal resolution for this purpose. Accordingly, we evaluate the Chen and Herring mapping function by ray tracing through the fine mesh model. Preliminary results indicate that gradient vectors can be incorrectly estimated in the presence of intense mesoscale disturbances, but that these conditions occur only infrequently.