

## Past continental shapes inferred from extrapolated GPS/GNSS data

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Katsumata et al. (JpGU2016) showed that there are good relation between crustal rotation angles from paleomagnetic data near the Andes and crustal rotation angles from extrapolated GPS/GNSS data on South American continent. Those calculations, however, use spline interpolation in a plane (Smith and Wessel, 1990). We improved the method for the interpolation of GPS data on a globe, and we applied greenspline interpolation for spherical surface (Wessel, 2009) . The result is that, there are some differences between the two interpolations and shapes of past continents are different. For instance, past Australia continent became about 100km to 500km wider, and that the gap between Australia - Antarctica continental shapes at about the break-up of the Gondwana super continent became smaller. This result strongly implies that 20 years of global GPS/GNSS data include over million year scale intra-plate deformations.

Keywords: GPS/GNSS data, spherical interpolation, past continental shapes