

Past continental shape inferred from GPS data

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Kono et al.,1985 analyzed paleomagnetic data around Andes and showed past shape of the south American continent about 50Ma and figured the Andes mountain range were more linear shape than at present. We tried to reconstruct the 50Ma shape of the south American continent from the current crustal motion of GPS data. Plate motion vectors observed from space geodesy including GPS, can comparable with plate motions of geological time scale. Gordon, 1993 showed VLBI plate motion (time scale of years) and NUVEL-1 plate motion (3 million years mean motion) are in great harmony with each other.

We applied a method of Harada and Kato(AGU Fall Meeting 2012), and calculated about 50Ma shape of the south American continent (figure below). The shape of the Andes mountain range were linear and in good harmony with the result of Kono et al.,1985. We conclude, thus, decades scale GPS data can compare with plate deformation of ten thousands years.

Keywords: GPS, Past continental shape, Deformation of plates

