# Evaluating the Baja British Columbia hypothesis by correcting for sedimentary inclination error

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Paleomagnetic inclinations from sediments of the western terranes of Canada and the USA are consistently too shallow for their reconstructed paleogeographic positions. Two contradicting explanations for these discrepancies are: (1) terranes have been displaced northward with respect to the stable American craton by several thousands of kilometres between the Late Cretaceous ($\sim$80 Ma) and the Eocene ($\sim$50 Ma) and (2) sedimentary inclination error has caused a shallow bias in the paleomagnetic directions. Here, we apply the elongation/inclination (E/I) method to paleomagnetic data sets of supposedly allochtonous terranes of western North America to correct for inclination error. Our results indicate that the paleomagnetic directions from the continental Silverquick sediments are not seriously affected by inclination error, but that the marine Nanaimo mudstones are about 11˚ too shallow. The corrected paleolatitudes (38-34˚N) indicate that the Canadian terranes were located adjacent to the Baja Californian margin during the Late Cretaceous (between 90 and 80 Ma), thus still supporting the Baja BC hypothesis. The paleomagnetic results imply that the Baja BC block must have been displaced northward by $\sim$3400 km in the period between 80 and 50 Ma. Inclination data from the Spences Bridge Group make the Cretaceous paleogeographic reconstruction of the North American margin even more complicated by implying that the same Baja BC block moved $\sim$2500 km southward between 100 and 90 Ma. This clearly emphasises the importance of obtaining reliable age control for the Late Cretaceous rocks of the western American margin, since opposing scenarios will now have to be reviewed in different time windows.