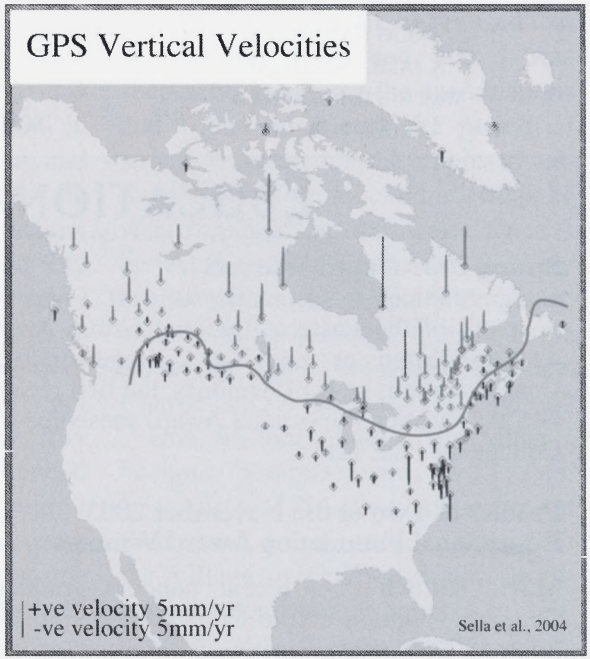
GPS Observes Postglacial Rebound

By Dr. Michael Craymer



A paper presented at the joint CGU/AGU meeting in Montreal on May 19 describing GPS observations of crustal motion in North America garnered substantial media interest in Canada, the United States, and Great Britain. GPS observations of the Canadian Base Network (CBN), the network of geodetic monuments established by the Canadian Geodetic Service as geodetic infrastructure for reference frame and surveying needs, provided essential information for describing the pattern of crustal movements in Canada and the U.S. The crustal movements are due to "postglacial rebound", which is the delayed response of the Earth to the retreat of the massive ice sheets from the last ice age. A consistent pattern of uplift in Canada, largest near Hudson Bay, and subsidence in the U.S is shown by the observations. Better knowledge of this pattern of motion improves the understanding of sea level and lake level changes and contributes to the Climate Change studies. The GPS-derived pattern of horizontal crustal motions also contributes to the understanding of earthquakes in eastern Canada. Regular CBN observations are planned to continue advancing the knowledge of these crustal motions. The paper is the result of collaboration between scientists at Natural Resources Canada (Drs. Michael Craymer, Thomas James and Stephane Mazzotti), and scientists at Northwestern University and other American institutions.

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