

2008 Fall Meeting  
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**s23a-1874**

HR: 1340h

AN: **S23A-1874**TI: [Mapping the Moho Beneath Northwest Canada: Crustal Structure Across CANOE](#)AU: \* **Courtier, A M**EM: [courtiam@jmu.edu](mailto:courtiam@jmu.edu)AF: *Department of Geology and Environmental Science, James Madison University, MSC 6903, Harrisonburg, VA 22807, United States*AU: **Gaherty, J B**EM: [gaherty@ldeo.columbia.edu](mailto:gaherty@ldeo.columbia.edu)AF: *Lamont-Doherty Earth Observatory, Columbia University, 61 Route 9W, Palisades, NY 10964, United States*AU: **Dalton, C A**EM: [dalton@bu.edu](mailto:dalton@bu.edu)AF: *Department of Earth Sciences, Boston University, 675 Commonwealth Avenue, Boston, MA 02215, United States*

AB: The Canadian Northwest Experiment (CANOE) traverses a wide variety of continental settings, allowing the study of continental assembly over a time span of nearly 4 Ga. CANOE consists of nearly sixty broadband seismometers with branches running approximately east-west from the Slave Craton across a series of Proterozoic orogens to the Canadian Cordillera and from Edmonton, Alberta across the Churchill Province to the Rocky Mountain Front. A third section runs roughly north-south parallel to the Rocky Mountain Front. A pilot group of twelve stations were installed in May 2003, and the remaining stations were operational beginning in May 2004. All stations were removed in September 2005. In this study, we obtain P-s differential times from Moho conversions using teleseismic receiver function analysis. In general, the preliminary results show larger differential times (on the order of 5 seconds) beneath stations on the craton and in the Churchill Province, at the eastern portion of the study area, and smaller differential times (on the order of 3-4 seconds) along the Rocky Mountain Front and beneath the Canadian Cordillera in the west. Crustal thickness is calculated using the differential times from Moho conversions and a local velocity model resulting from ambient-noise cross-correlation tomography beneath the array. The resulting crustal thicknesses range from approximately 25-45 km. In addition to direct P-s Moho conversions, we examine the receiver functions for arrivals from Moho multiples, and mid-crustal, lithospheric, and lithosphere-asthenosphere conversions.

DE: 7203 Body waves

DE: 7205 Continental crust (1219)

DE: 9350 North America

SC: Seismology [S]

MN: 2008 Fall Meeting

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