Three lithospheric cross sections provide a continental-scale synthesis of studies in a variety of disciplines. The sections cover the Labrador, Trans-Hudson, and Western Superior orogens. The three cross sections are intended to capture major lithospheric provinces, major tectonic events, and key crustal elements, including terranes, mafic dykes, and collisional sequences. Each cross section includes merged interpretations from different sources, with a focus on near-vertical incidence seismic reflection data. Earth curvature is incorporated; the Trans-Continental Profile spans 6000 km. For detailed discussion and references see Hammer et al., CJES, 47(5), 2010.

Map: A simplified tectonic element map of Canada with locations of the cross-sections. Thin white lines identify terranes and subducting plates. The tectonic elements are grouped by tectonic age — defined as the most recent episode of major tectonic deformation in an orogen (see Appendix A). See text for detailed descriptions of each orogen. The map shows the Slave-Northern Cordillera (SNORCLE) transect, the Eastern Canadian Shield Onshore-Offshore (ECSOOT) transect, the Trans-Continental Corridor, and the Slave-Northern Cordillera Lithospheric Evolution (SNORCLE) transect. The various line and figure numbers are explained in the captions. Other abbreviations: JdF – Juan de Fuca, MHB – Medicine Hat Block.

Cross sections: The interpreted lithospheric structure for each profile is displayed in conjunction with seismic reflection and seismic line data. The general orientation of each cross-section segment is shown in the diagram. In general, the reflection fabric and tectonic events are indicated by coloration. Thin red lines represent the most prominent reflections and denote fabrics and faults. The composite P-wave velocity model panels are presented using a common color scale. Velocities are also shown using numbers (km/s) and thin, red lines. Other abbreviations: JdF – Juan de Fuca, MHB – Medicine Hat Block.

The LITHOPROBE trans-continental lithospheric cross sections: Imaging the internal structure of the North American continent


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