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A seismic tomography study of lithospheric structure under the Norwegian Caledonides

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A deep lithospheric transition between southern Norway and southern Sweden has been revealed in papers by Medhus et al. (2009,) and Medhus (2010). This lithospheric transition is crossing various tectonic units including the Caledonides.. We address the question of whether this transition continues towards the north along the Caledonian Mountains or not?
For this purpose we present new results of relative P-wave tomography for the northern SCANLIPS (SCANdinavia Lithosphere ProfileS) profile across the northern part of the Caledonides combined with data from permanent seismological stations in this area. These results are compared the upper mantle structure obtained by Medhus (2010) and Hejrani et al. (2011) for Caledonian and shield units to the south in southern Norway and Sweden, where the lithospheric transition follows the eastern margin of the Oslo Graben.
Crooked line seismic tomography (Hejrani et al., 2011) (optimizes 2D ray coverage under a crooked profile) is used to resolve the details of the transition boundaries in lithosphere structure across the mountains and its relation to the geological surface settings.

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