IMAGING THE THERMAL STRUCTURE OF THE CONTINENTAL UPPER MANTLE: INVERSION OF SEISMIC SURFACE WAVES WITH THERMAL CONSTRAINTS

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We compare the seismic model and the heat flow model during the Monte Carlo simulation. Figure 4 shows the result of the simulation. Comparing different velocities derived using equations (4)-(8) at three depths and temperatures (K), we note that:

1. The velocity at the top of the mantle predicted from the seismic model must be in agreement with the temperatures predicted from heat flow information.

2. The seismic model must predict a physically plausible mantle geotherm.

Figure 3. Comparison of the seismic model and the heat flow model during the Monte Carlo simulation. Figure 4 shows the result of the simulation. Comparing different velocities derived using equations (4)-(8) at three depths and temperatures (K), we note that:

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We propose two types of constraints:

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