


2010 AGU Fall Meeting

You may print by clicking on this  button. To return to the previous page, close this browser window or click the 'X' button in the top right corner of the page.

ID# DI51B-1873

Location: Poster Hall (Moscone South)

Time of Presentation: Dec 17 8:00 AM - 12:20 PM

A Combined Study of the Influence of Melting, Temperature, and Chemical Composition on Seismic Wave Velocities

*S. Hier-Majumder*¹; *A. M. Courtier*²

1. Geology, University of Maryland, College Park, MD, United States.

2. Geology and Environmental Science, James Madison University, Harrisonburg, VA, United States.

Seismic body waves provide a wealth of information on the internal structure of the Earth. On their path from the source to receiver, the waves encounter a variety of environmental features, such as variation temperature, rocks of different composition, and melting. While the influence of each of these parameters on the seismic wave have been studied extensively, combined studies of the trade-off between these different factors influencing the seismic velocities are relatively few. We report synthetic seismic velocity profiles in the upper mantle, combining the effects of temperature, mantle composition, and melting. The models also include the influence of melt composition on the seismic velocity. Our results indicate that for an equilibrium melt texture, only 1 volume% melting can mimic the effect of a temperature increase of up to 500 K.

Contact Information

Saswata Hier-Majumder, College Park, Maryland, USA, 20742-0000, [click here](#) to send an email

ScholarOne Abstracts® (patent #7,257,767 and #7,263,655). © [ScholarOne](#), Inc., 2010. All Rights Reserved.

ScholarOne Abstracts and ScholarOne are registered trademarks of ScholarOne, Inc.
[Terms and Conditions of Use](#)