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From Chapter 2 (Global seismic structure maps, by Jeroen Ritsema) in GSA Special Paper 388, Plates, plumes, and paradigms, edited by Gillian R. Foulger, James H. Natland, Dean C. Presnall, and Don L. Anderson

Figure 1: Whole-mantle cross-sections through S20RTS. The blue line on the globe indicates the surface projection of the cross-section. Its center and azimuth (clockwise from north at the center) are indicated in the lower-right corner. Circles on this line and ticks on the cross-section are 30˚ apart. In regions colored red (blue) the shear velocity is lower (higher) than the average shear velocity at that depth. To bring out the relatively weak, shear velocity variations in the mid-mantle, the total variation in shear velocity is 3%. However, lateral velocity variations in the uppermost mantle are much stronger. Triangles indicate the locations of hotspots from the catalog of Sleep (1990). Cross-sections are through Afar at angles of a) 30˚, b) 60˚, c) 90˚, and d) 120˚.

Figure 2: As Figure 1 except cross-sections through Easter island.

Figure 3: As Figure 1 except cross-sections through Galapagos.

Figure 4: As Figure 1 except cross-sections through Hawaii (see also Walker et al., this volume).

Figure 5: As Figure 1 except cross-sections through Hoggar (see also Liégeois et al., this volume).

Figure 6: As Figure 1 except cross-sections through Iceland (see also Björnsson et al., this volume; Clift, this volume; DeLaughter et al., this volume; Foulger et al., this volume; King, this volume; Lundin and Doré, this volume).

Figure 7: As Figure 1 except cross-sections through Kerguelen.

Figure 8: As Figure 1 except cross-sections through Louisville.

Figure 9: As Figure 1 except cross-sections through Reunion.

Figure 10: As Figure 1 except cross-sections through Samoa.

Figure 11: As Figure 1 except cross-sections through Tristan da Cuhna (see also Bailey and Woolley, this volume; Fairhead and Wilson, this volume; Vogt and Jung, this volume).

Figure 12: As Figure 1 except cross-sections through Yellowstone (see also Jordan, this volume).

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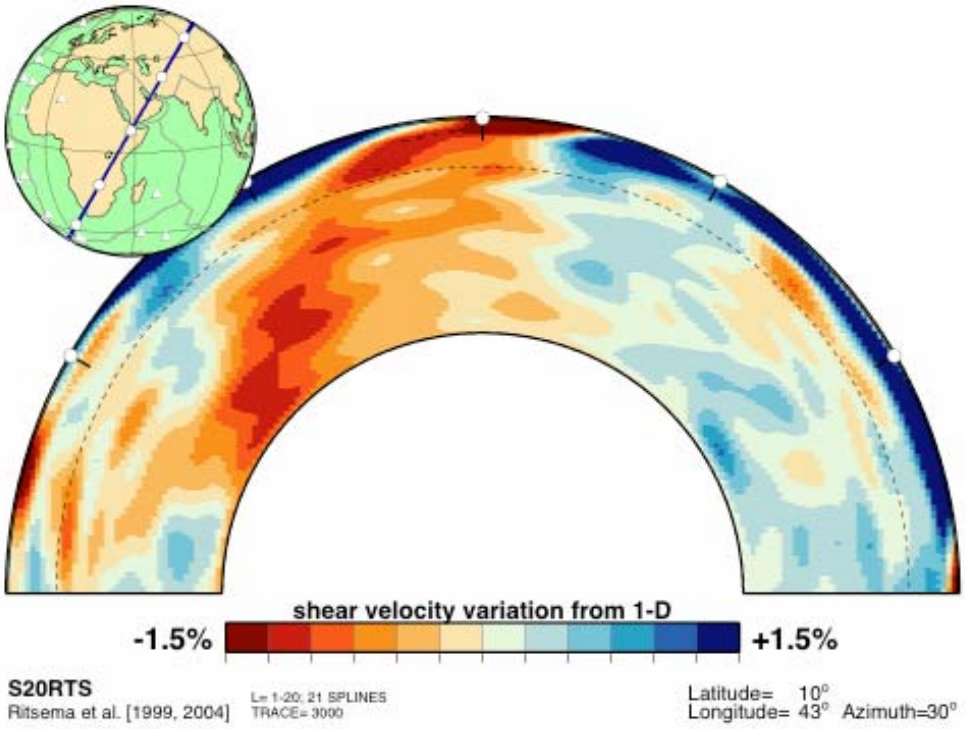
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-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
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Latitude= 10°
Longitude= 43° Azimuth=30°

Figure 1a

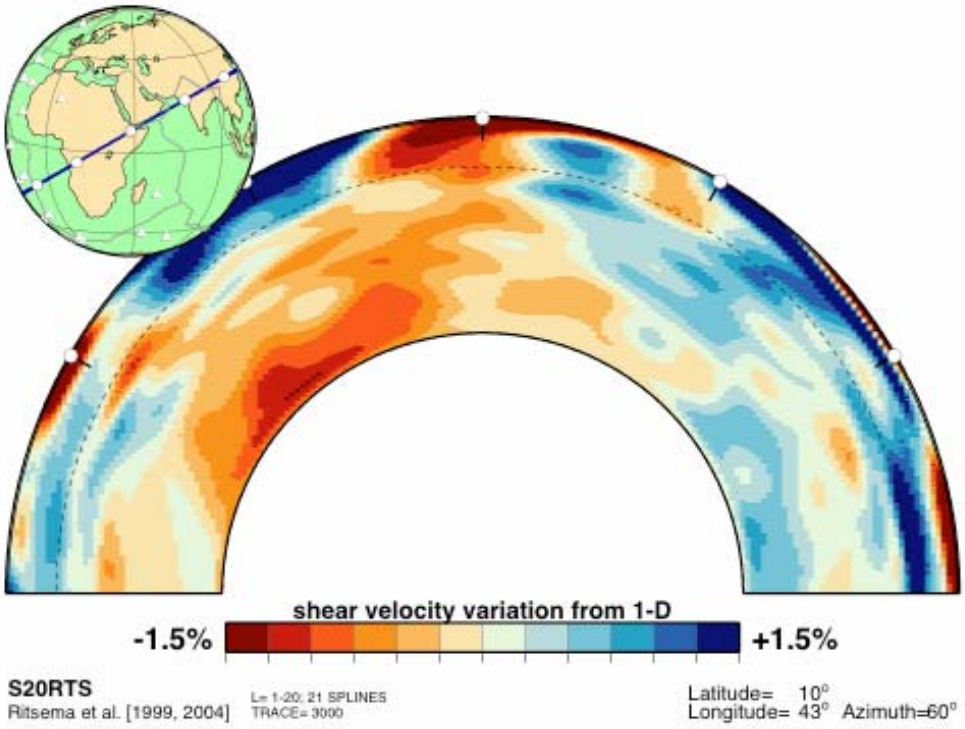
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Figure 1b

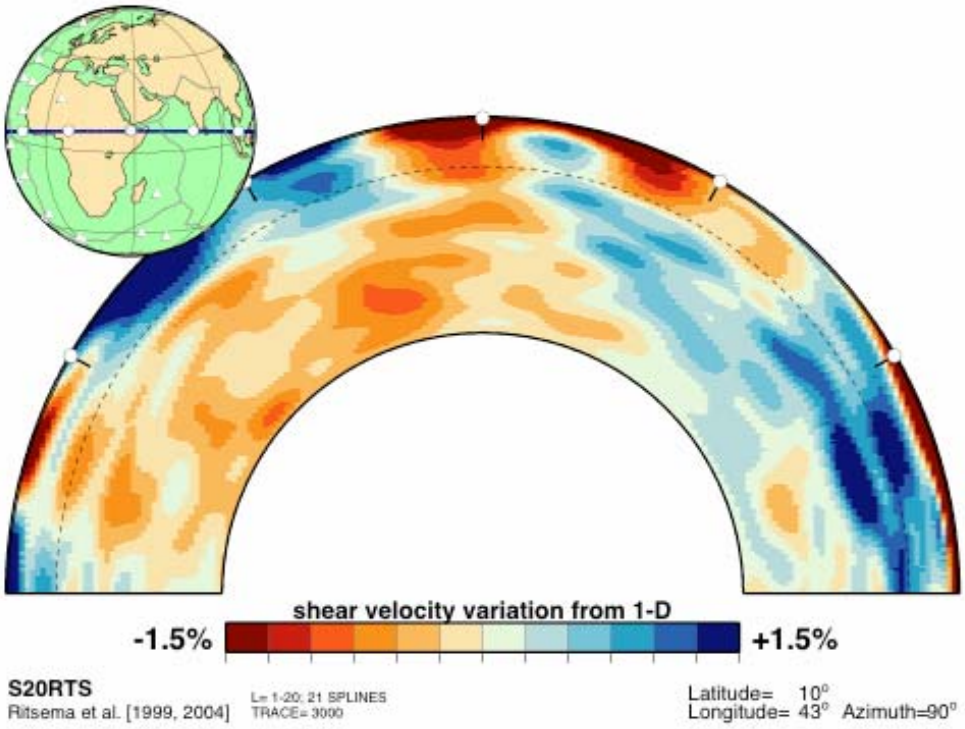
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Figure 1c

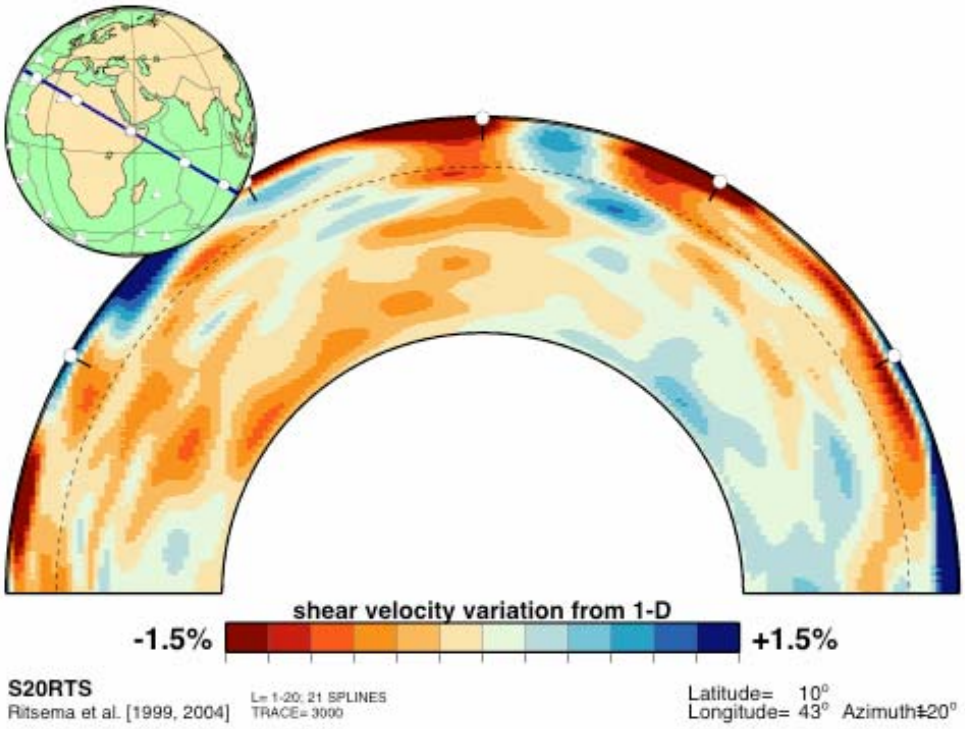
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Figure 1d

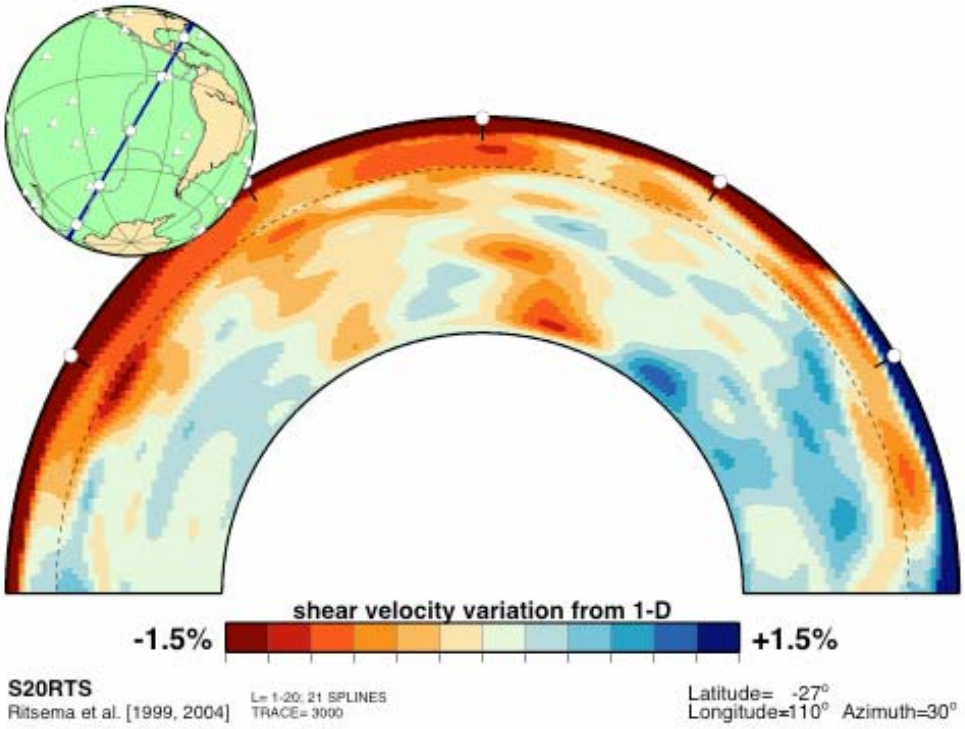
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Figure 2a

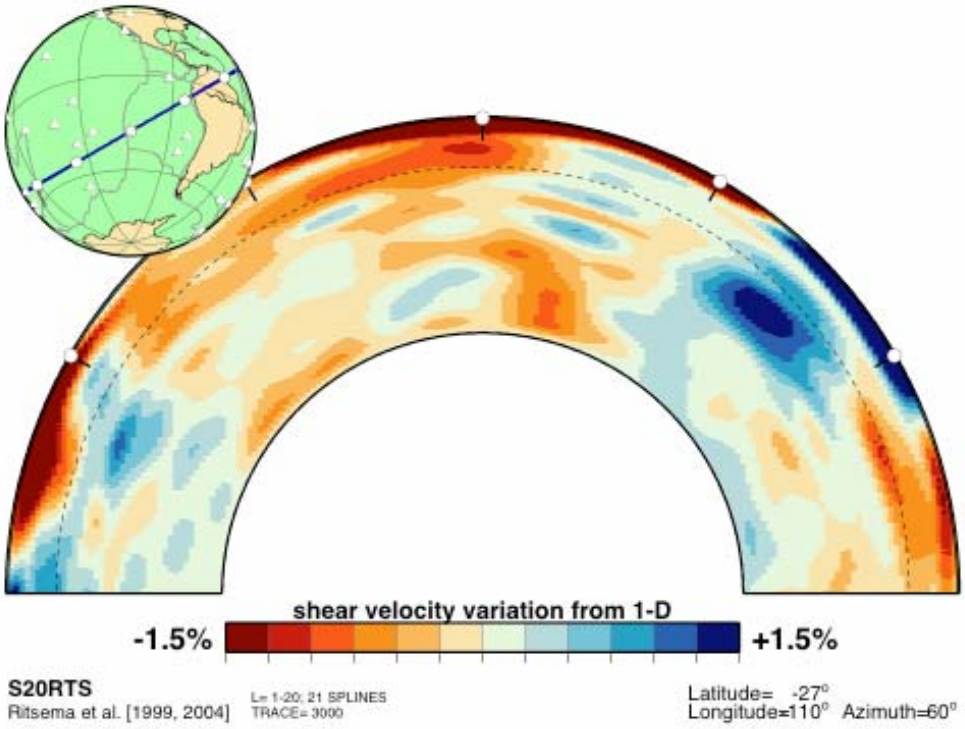
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Figure 2b

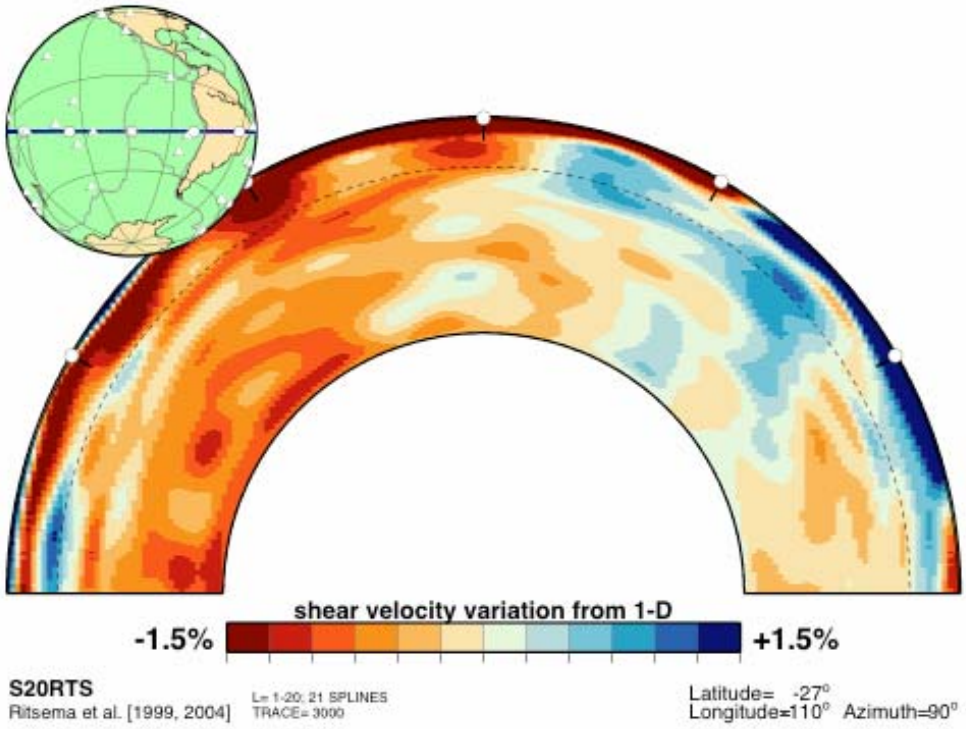
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Figure 2c

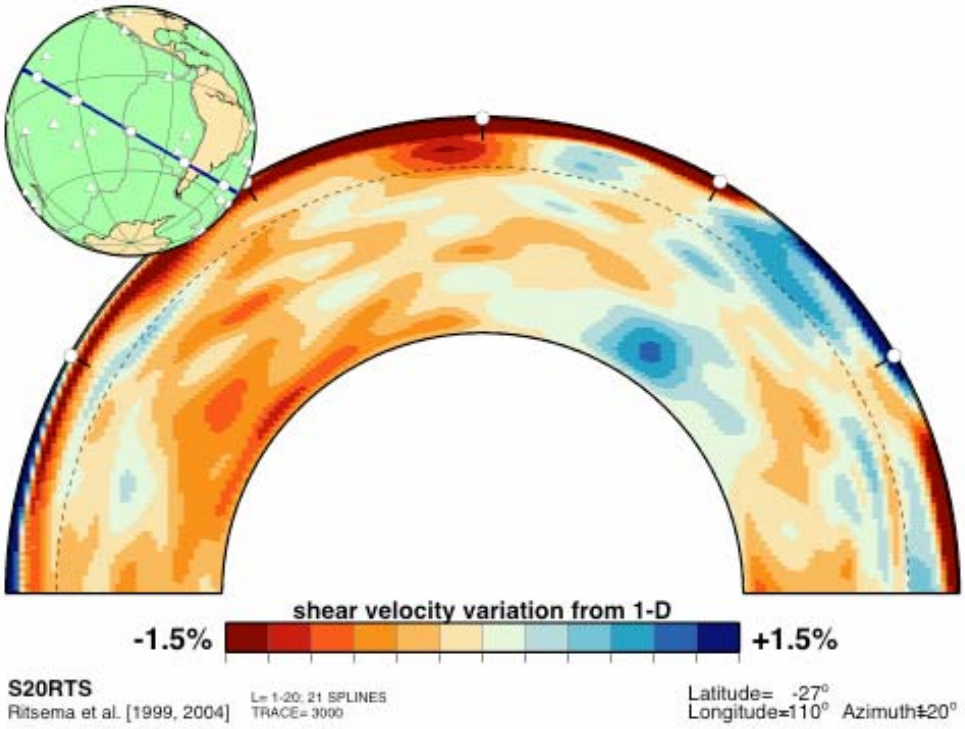
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Figure 2d

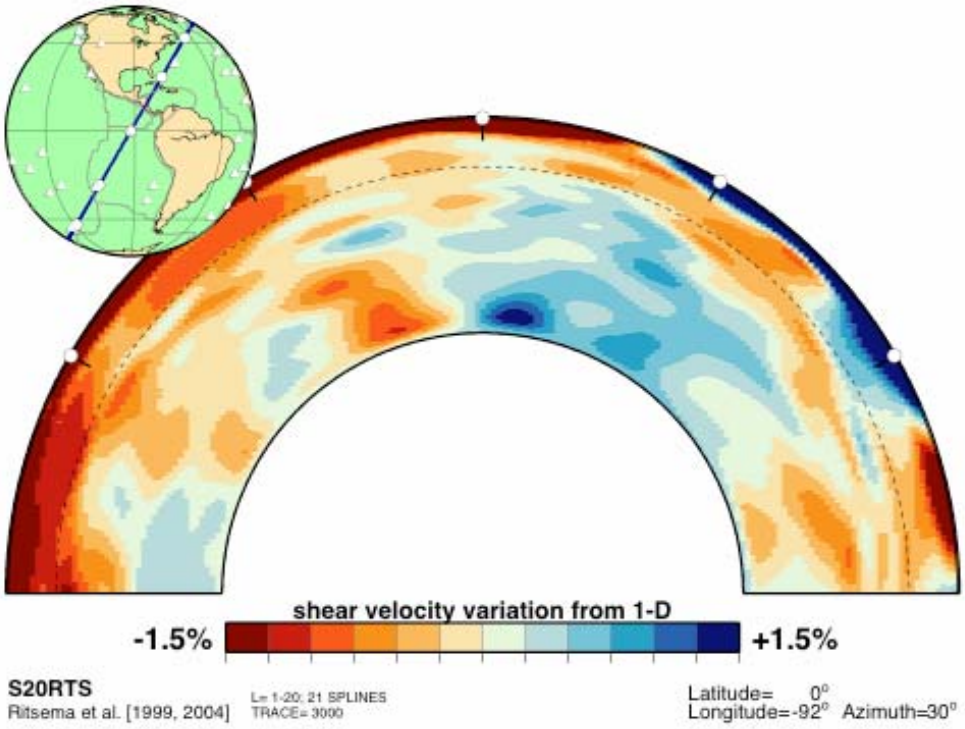
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Figure 3a

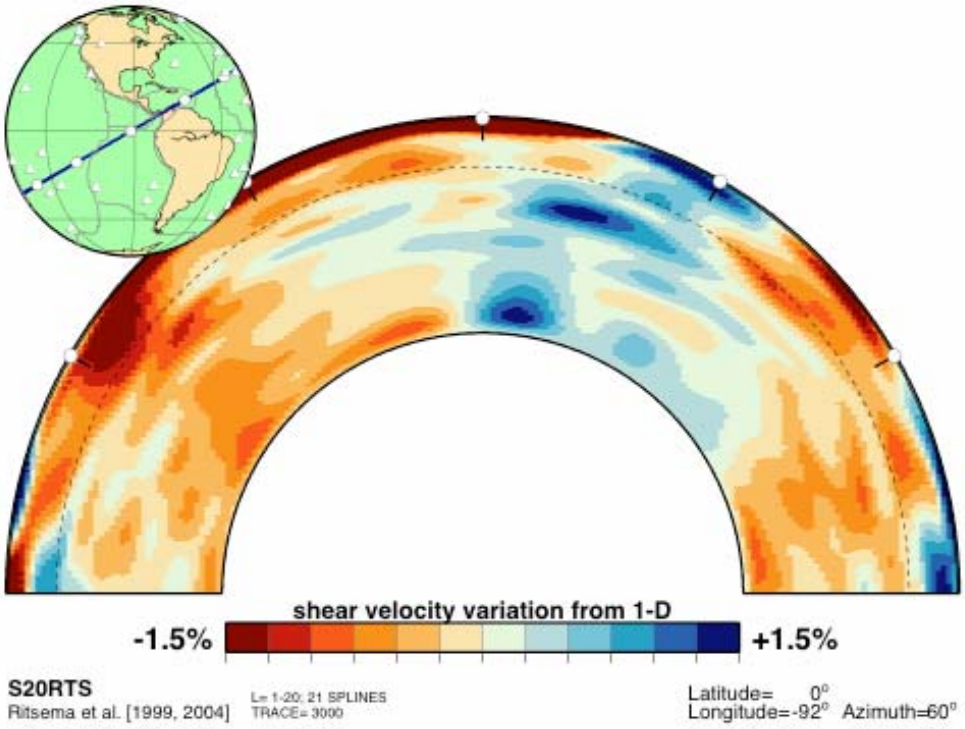
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Figure 3b

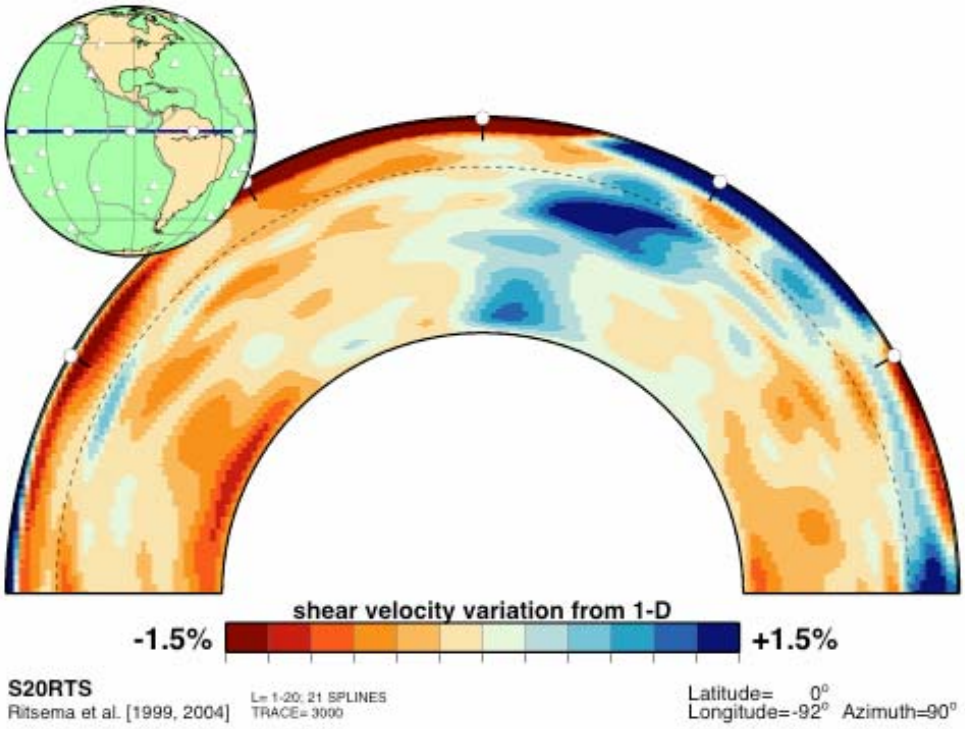
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Figure 3c

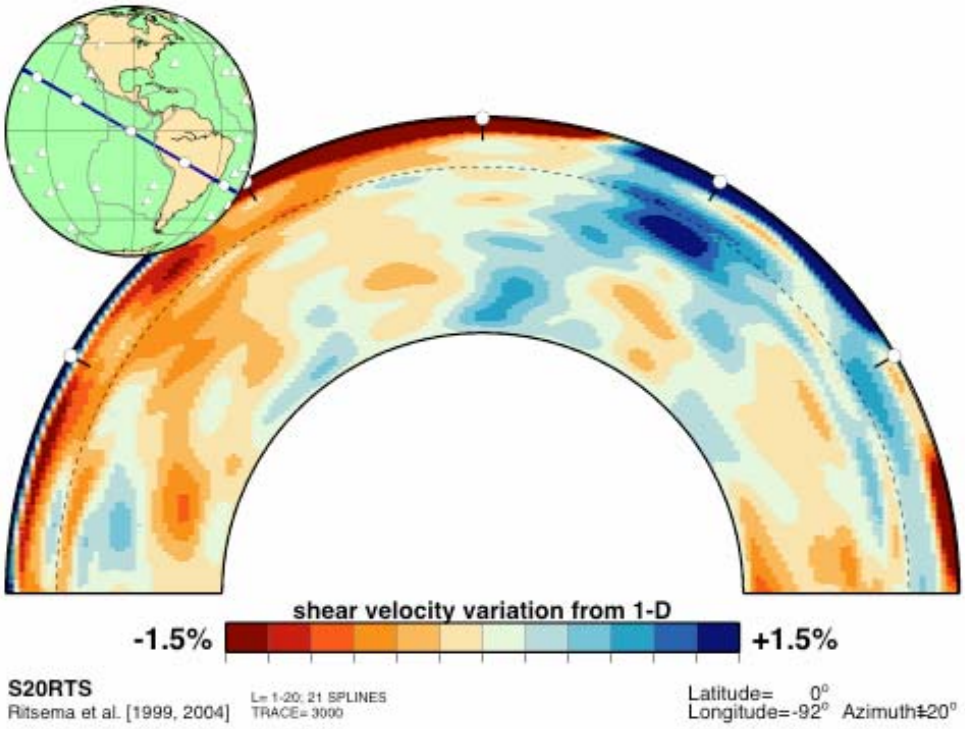
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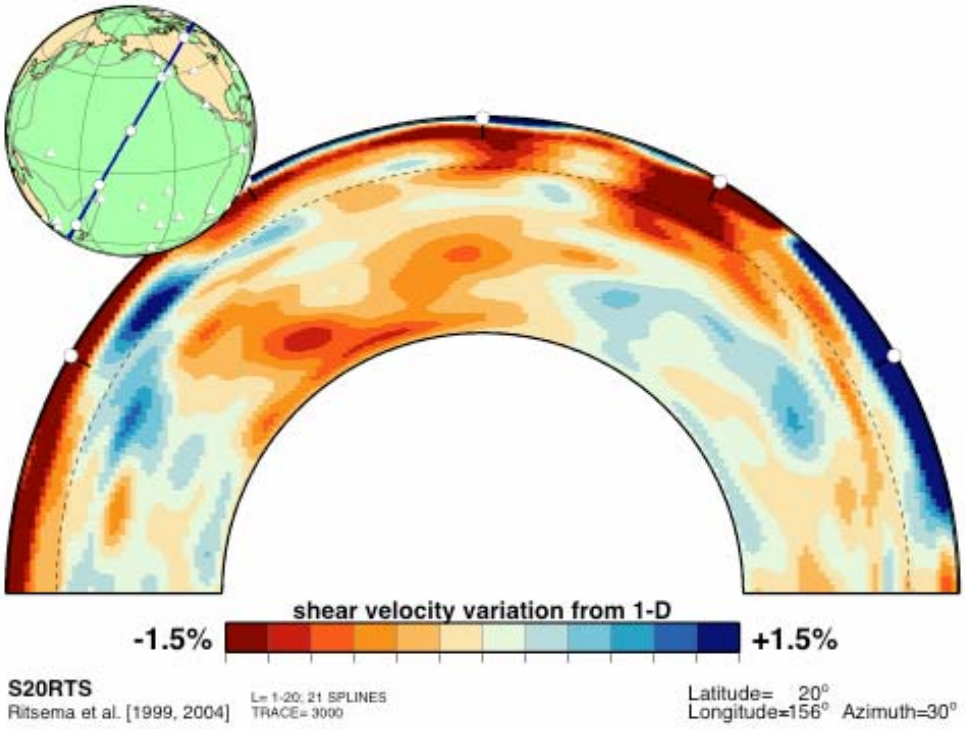
Figure 3d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S20RTS
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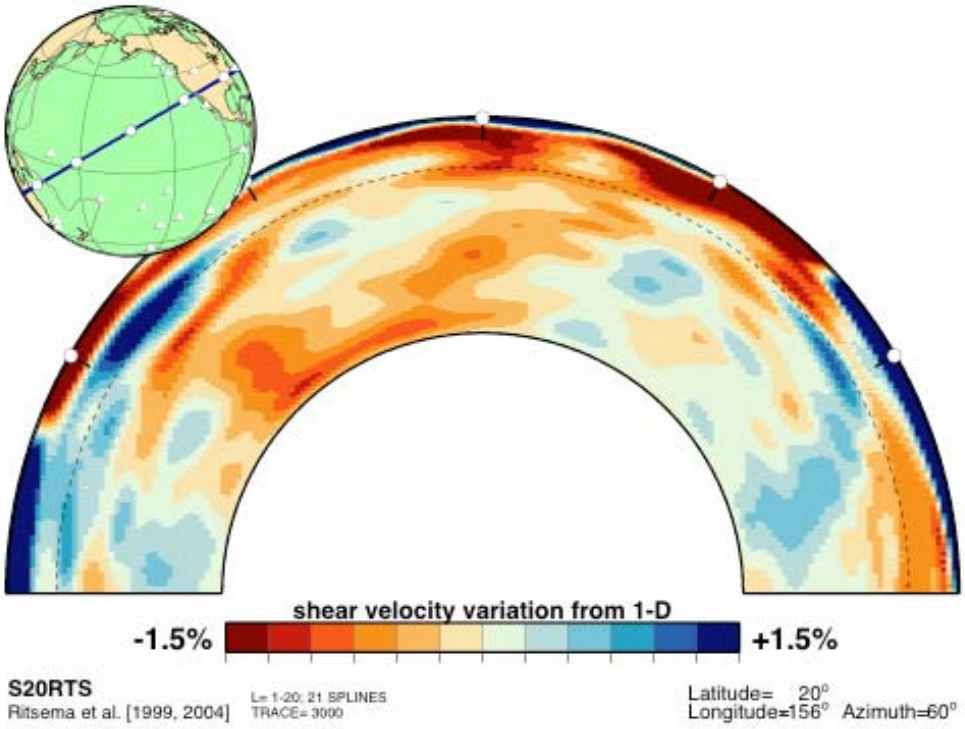
Figure 4a


shear velocity variation from 1-D
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+1.5%
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Figure 4b

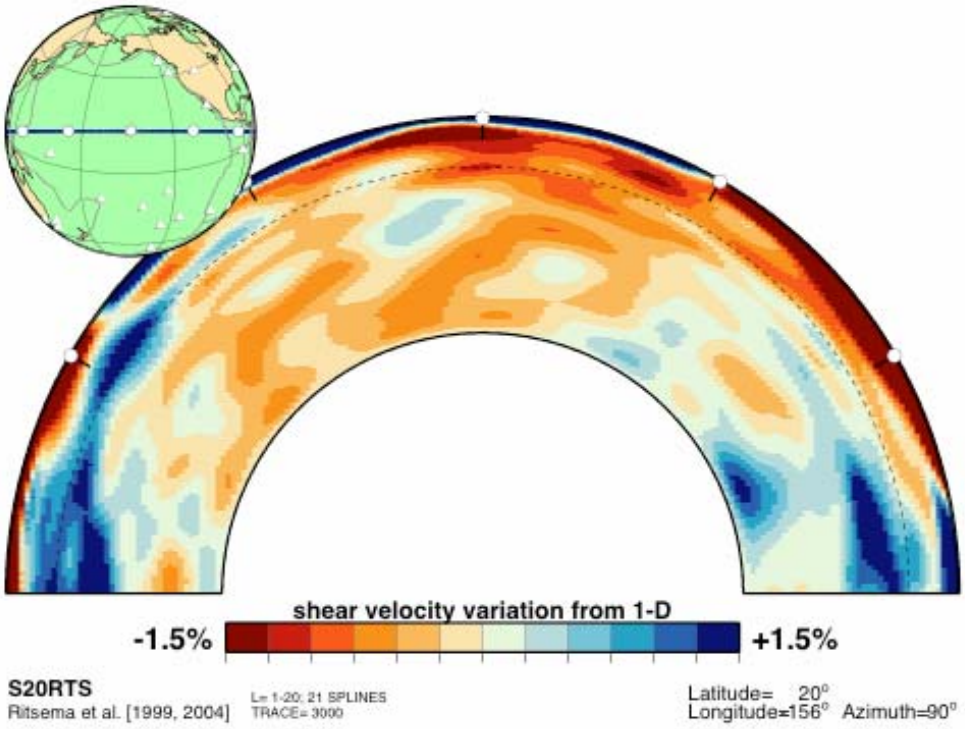
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Figure 4c

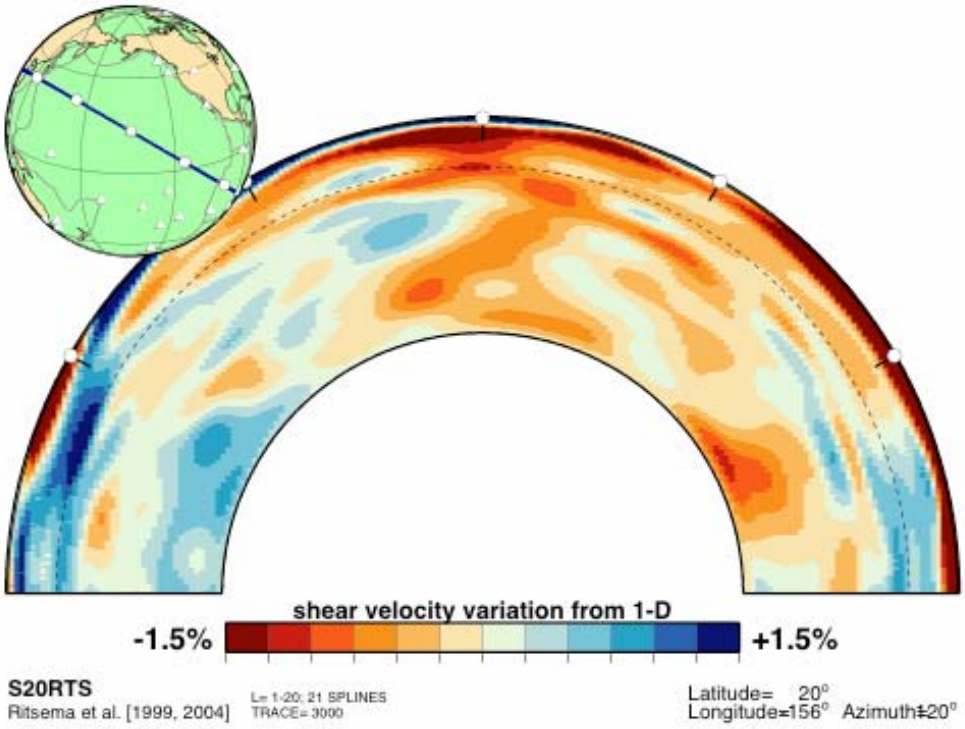
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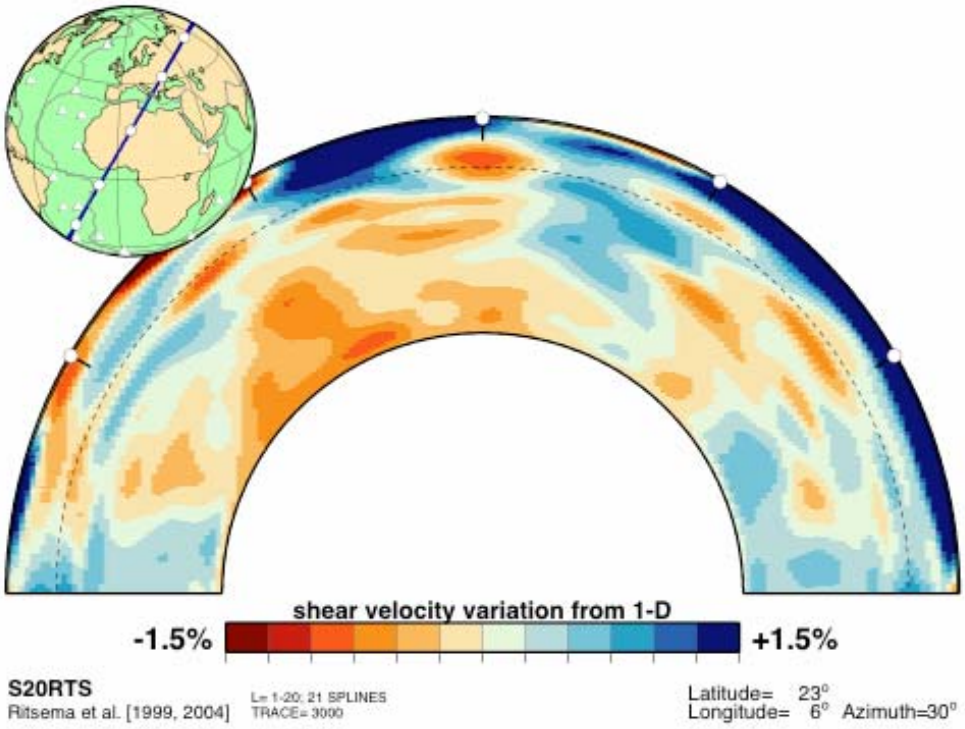
Figure 4d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S20RTS
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Figure 5a

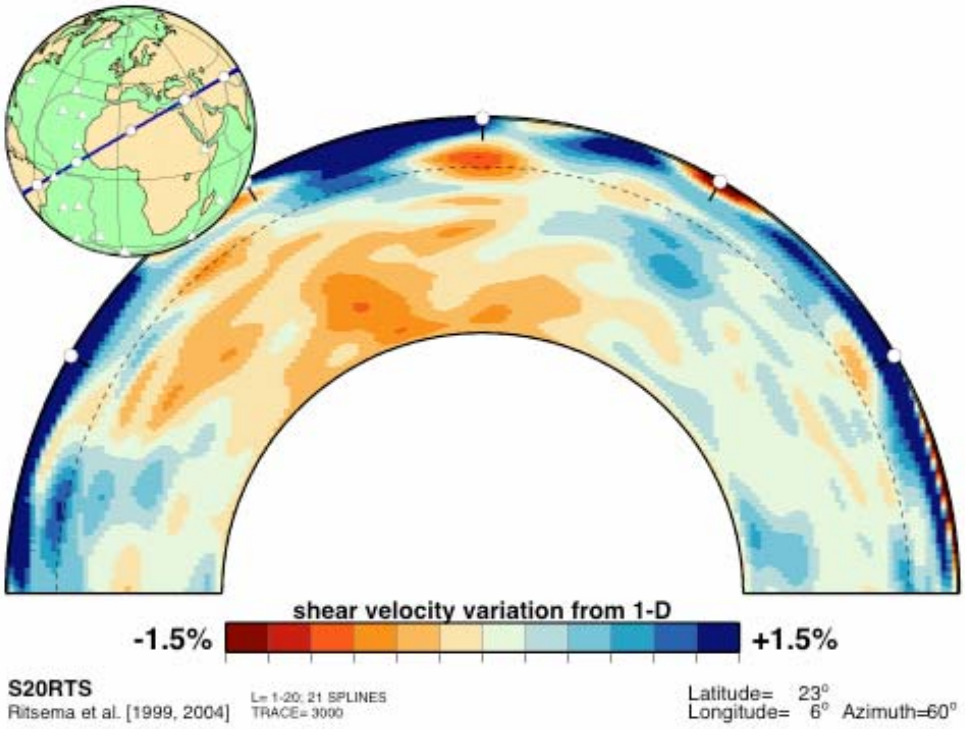
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Figure 5b

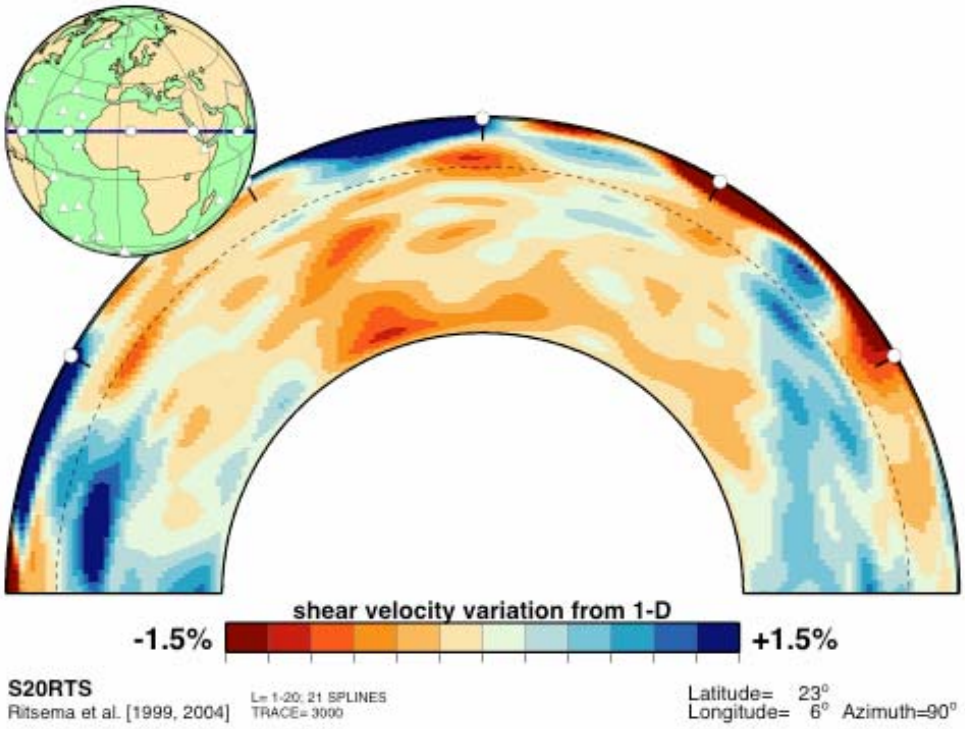
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Figure 5c

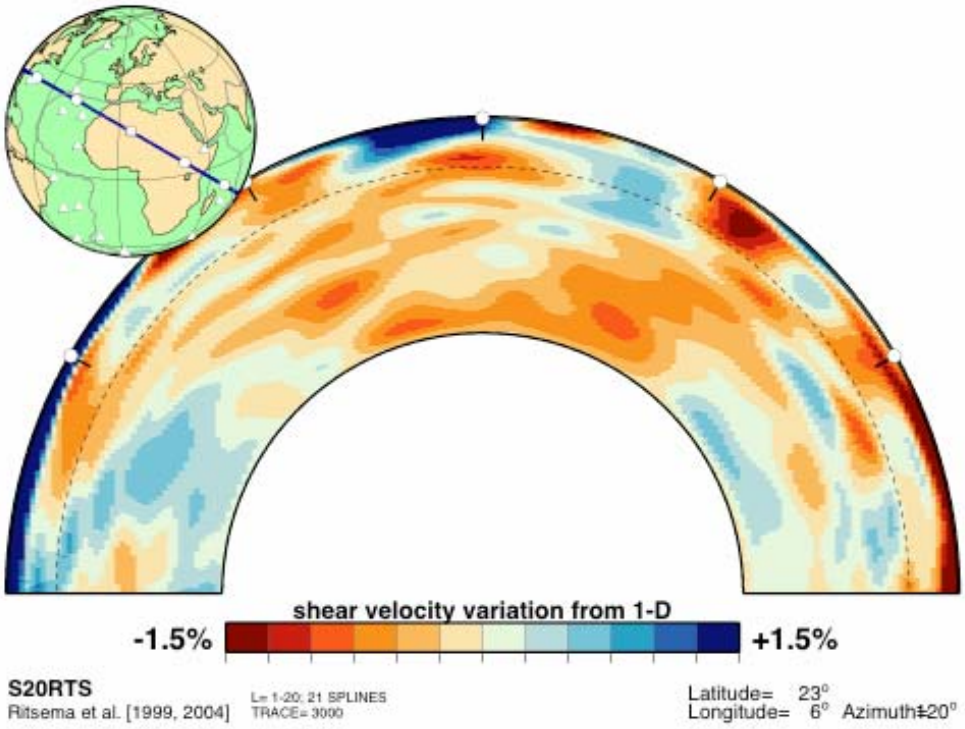
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Figure 5d

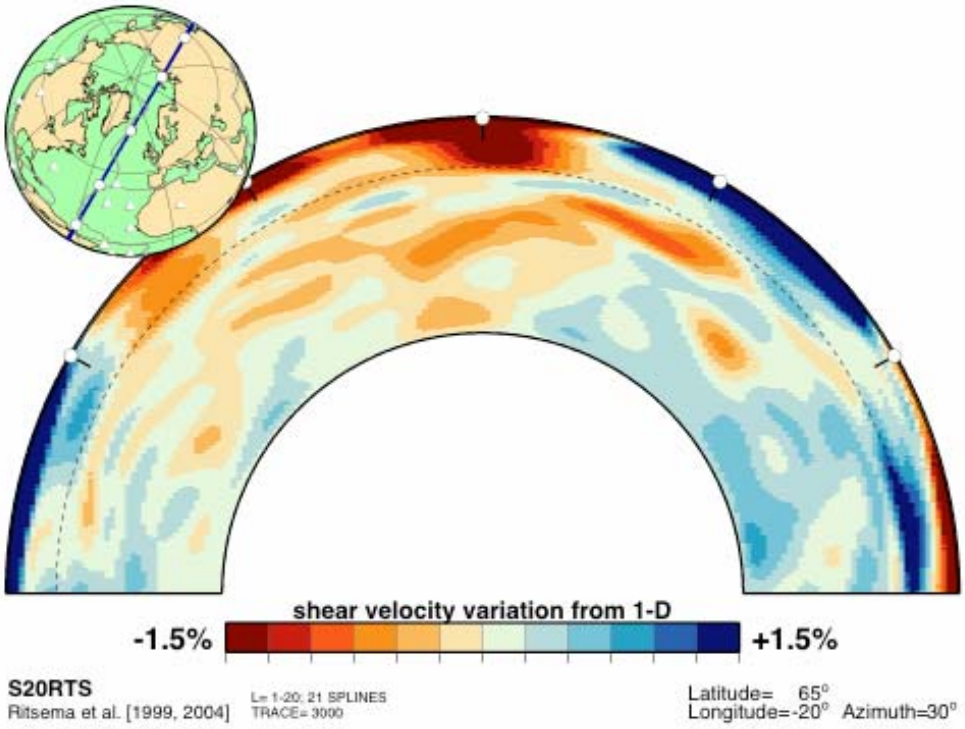
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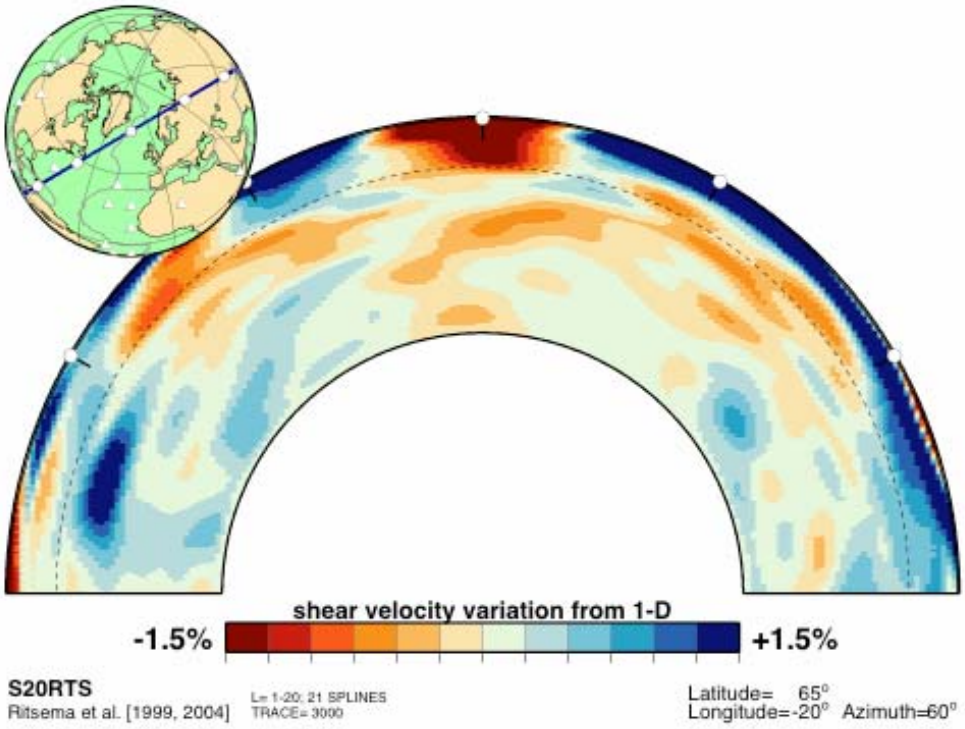
Figure 6a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S20RTS
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Figure 6b

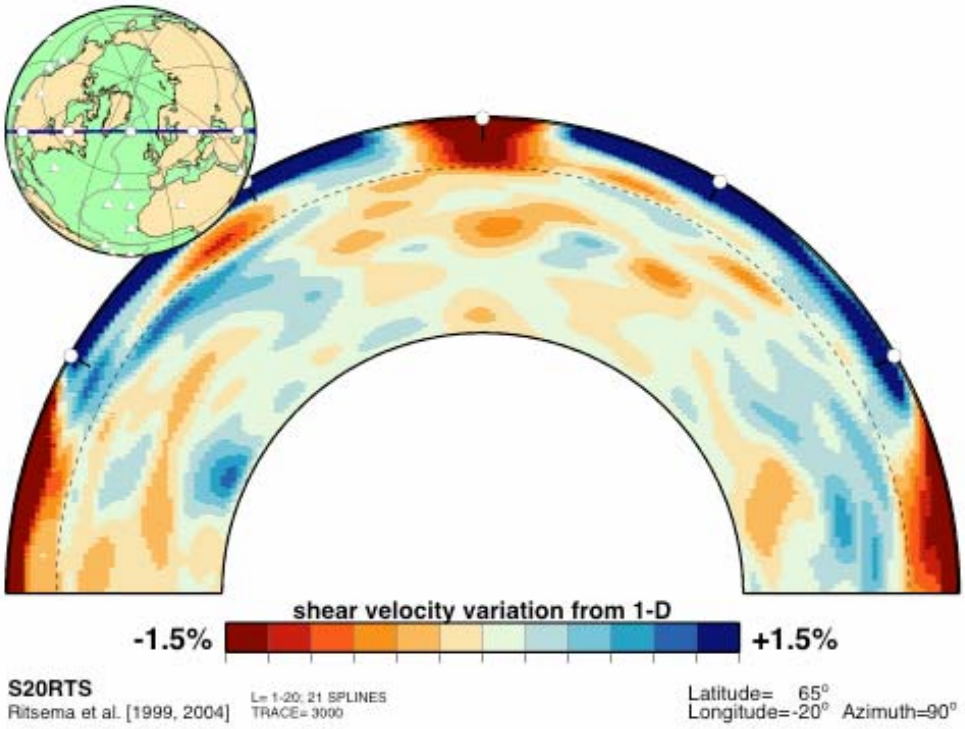
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Figure 6c

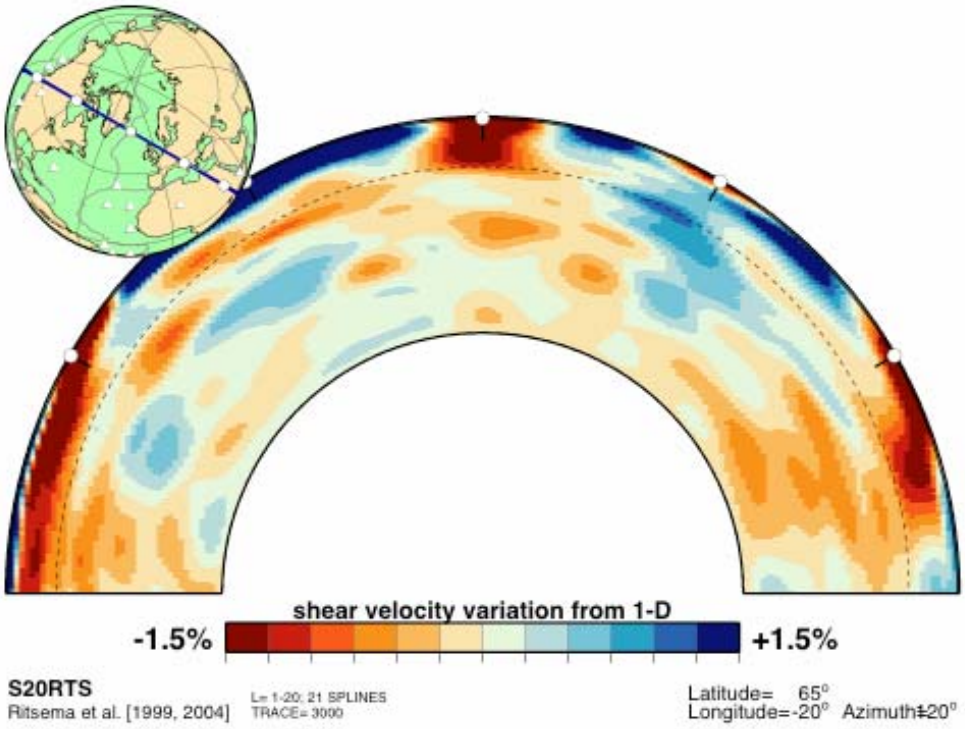
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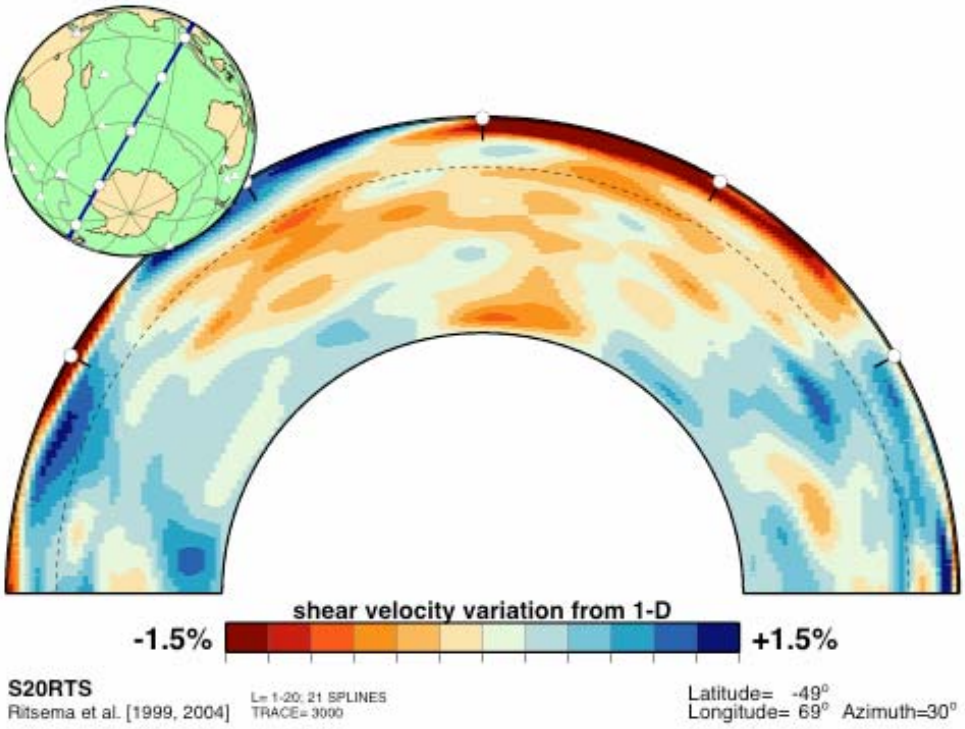
Figure 6d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S20RTS
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Figure 7a

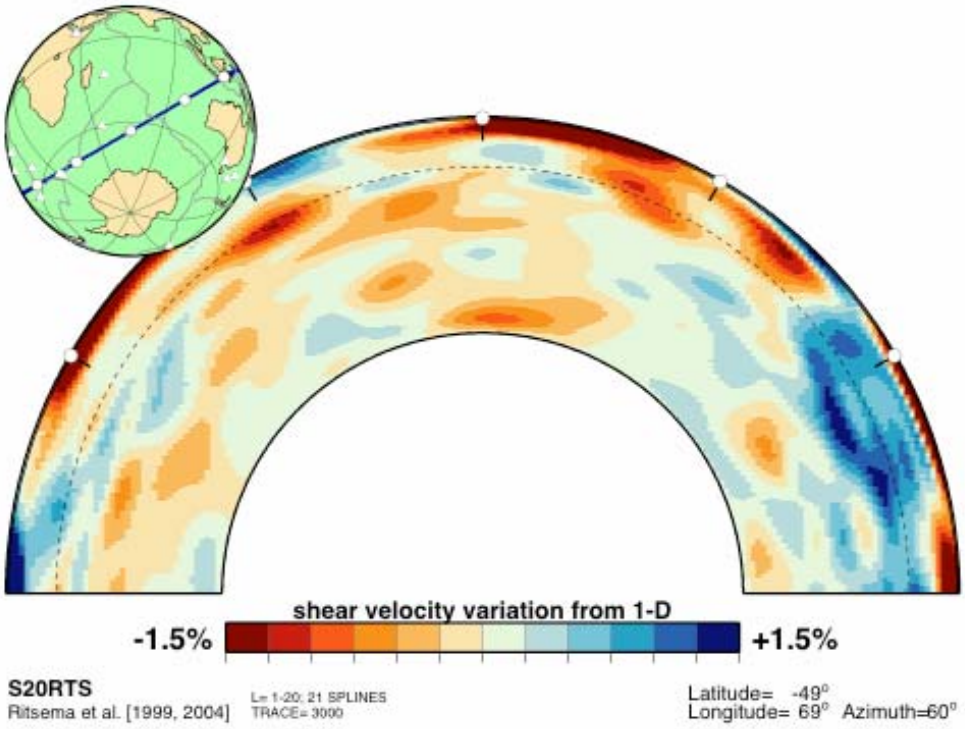
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Figure 7b

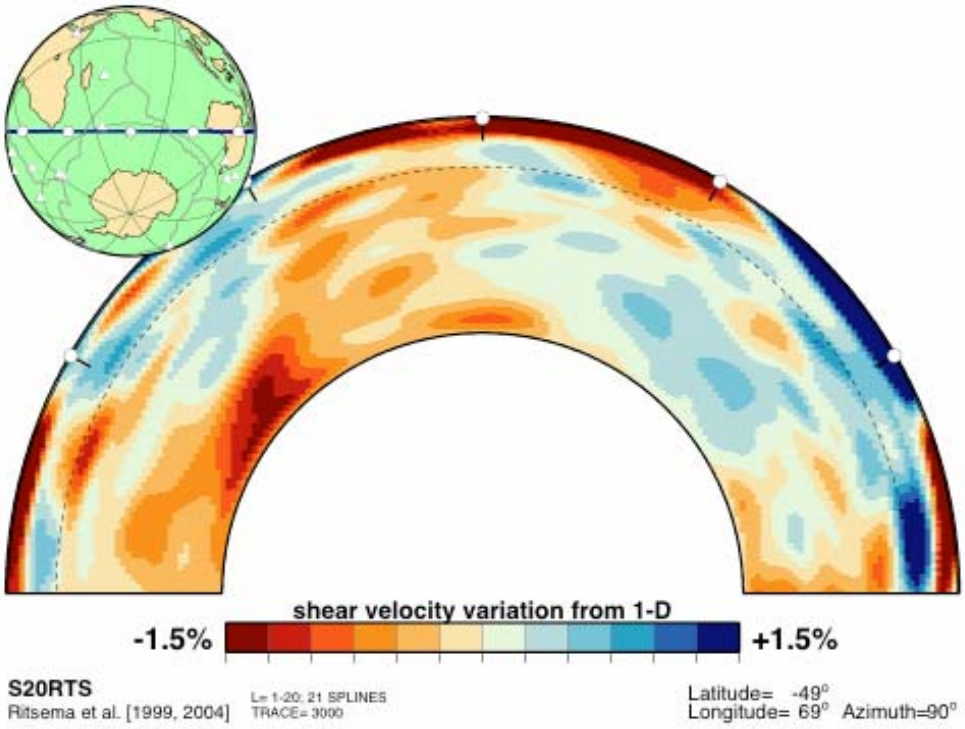
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Figure 7c

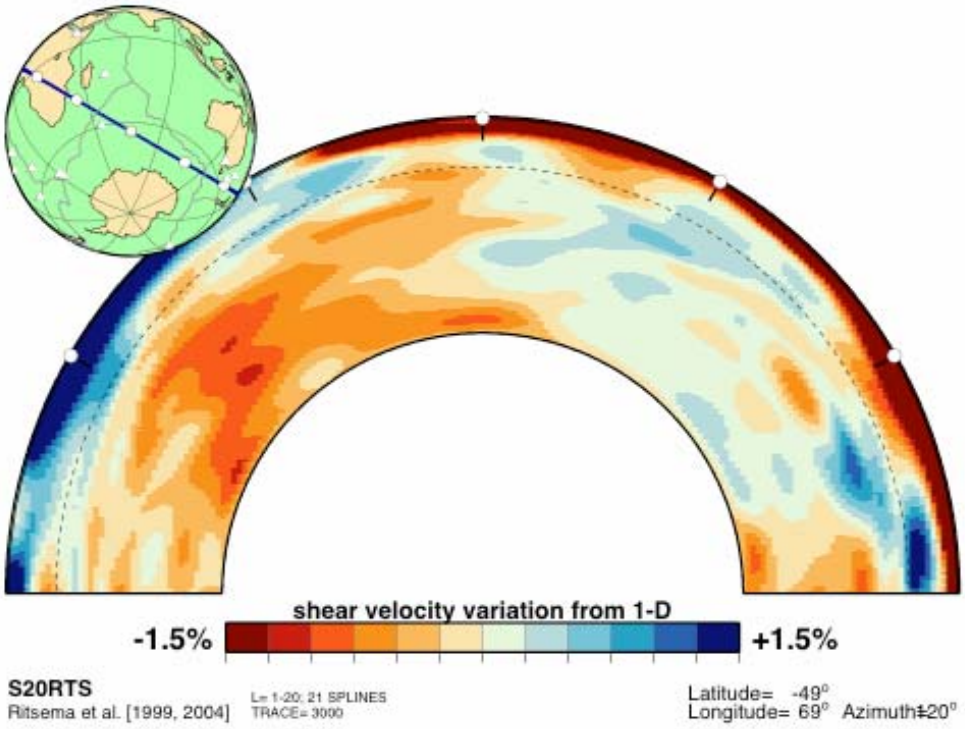
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Figure 7d

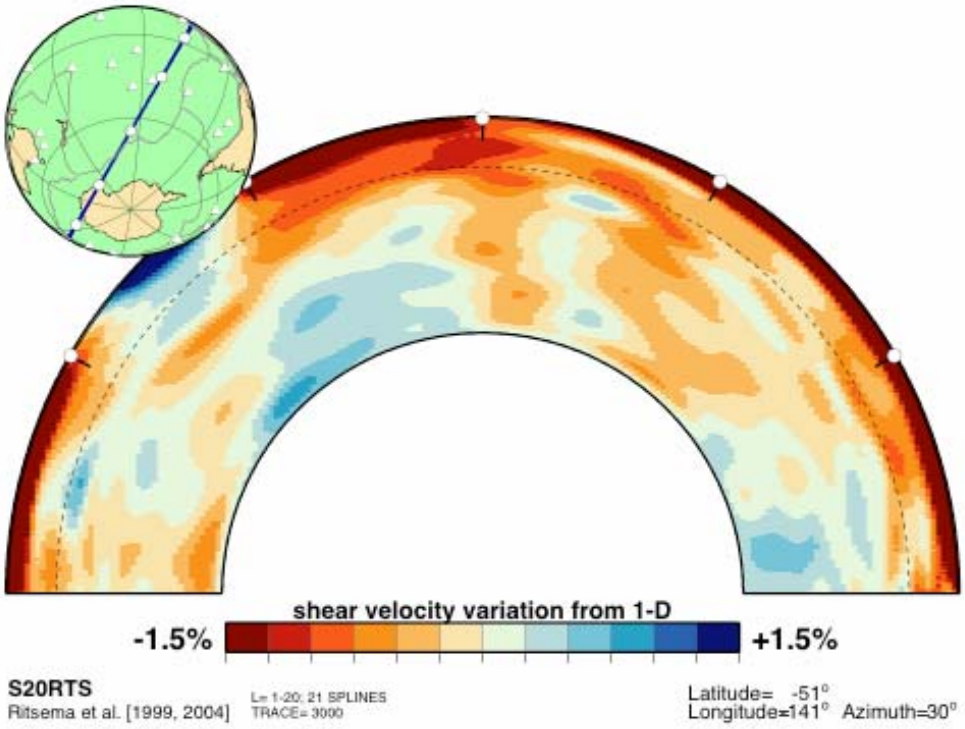
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Figure 8a

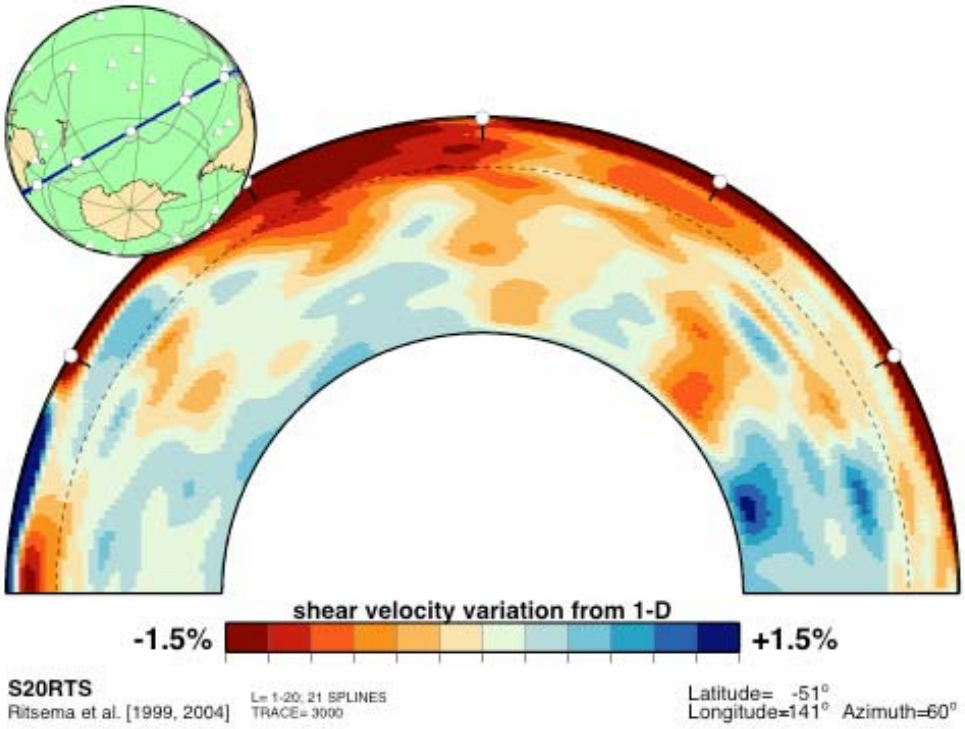
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Figure 8b

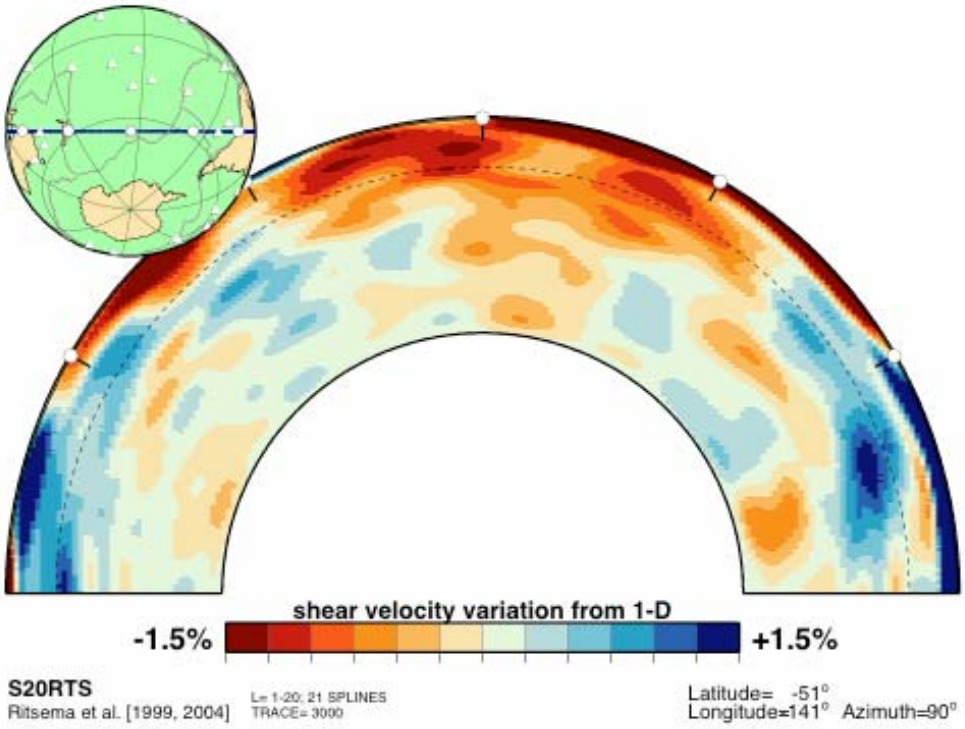
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -51°
Longitude=141° Azimuth=90°

Figure 8c

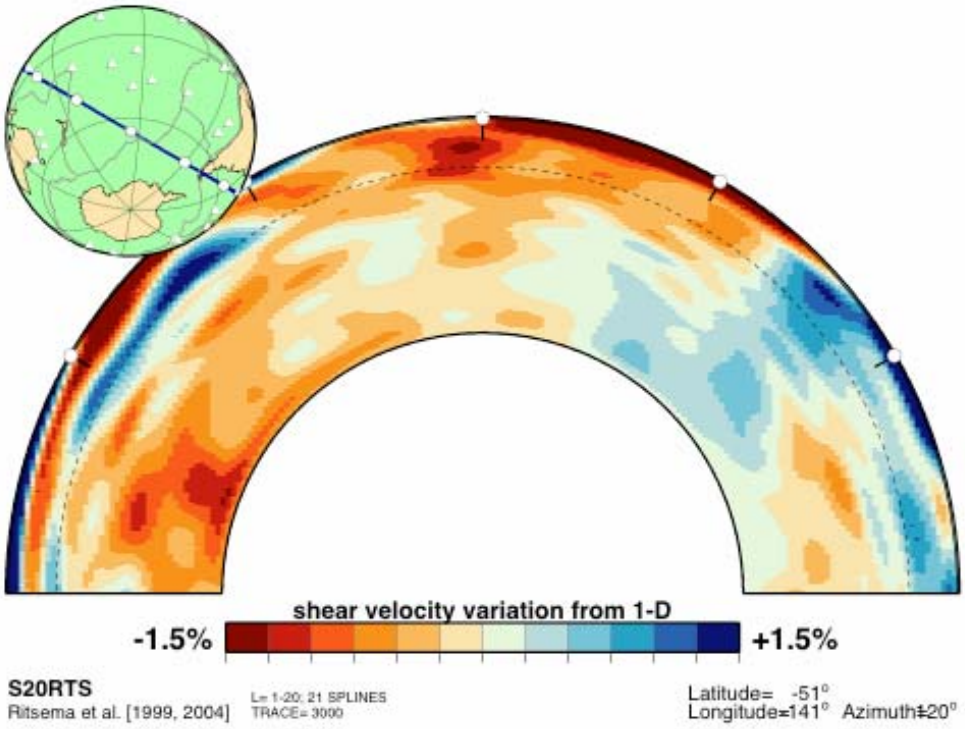
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -51°
Longitude=141° Azimuth=20°

Figure 8d

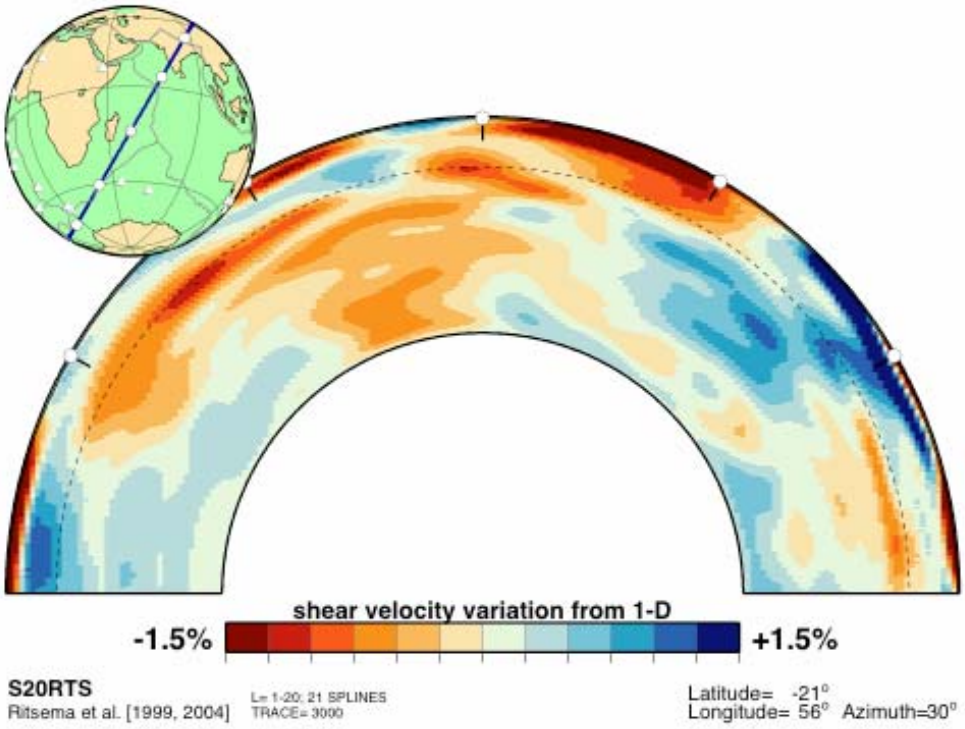
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -21°
Longitude= 56° Azimuth=30°

Figure 9a

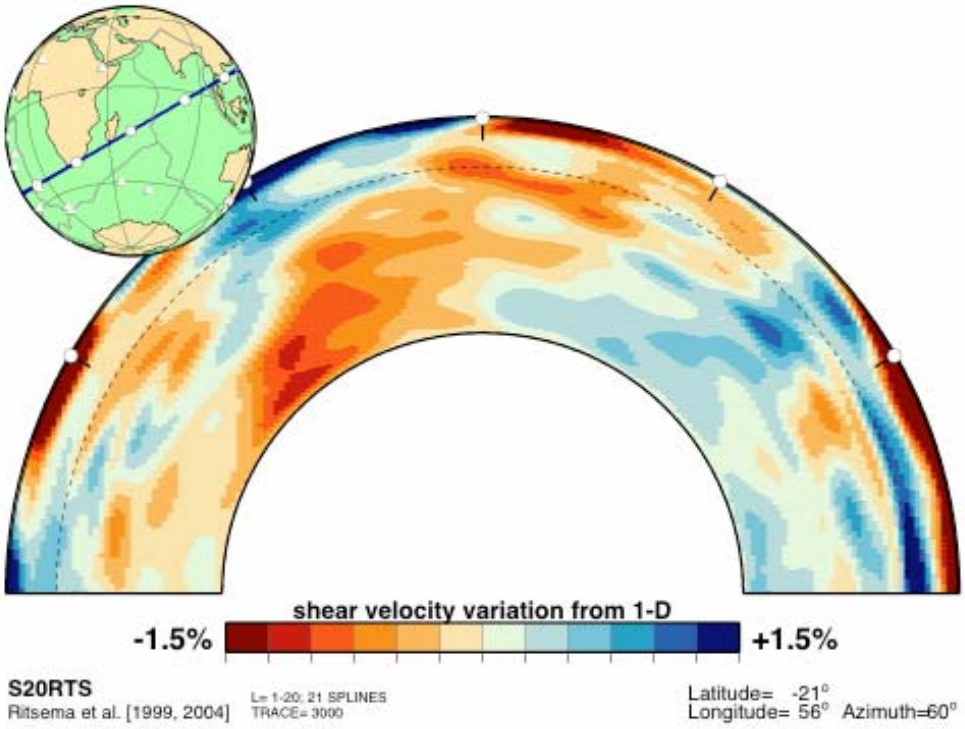
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -21°
Longitude= 56° Azimuth=60°

Figure 9b

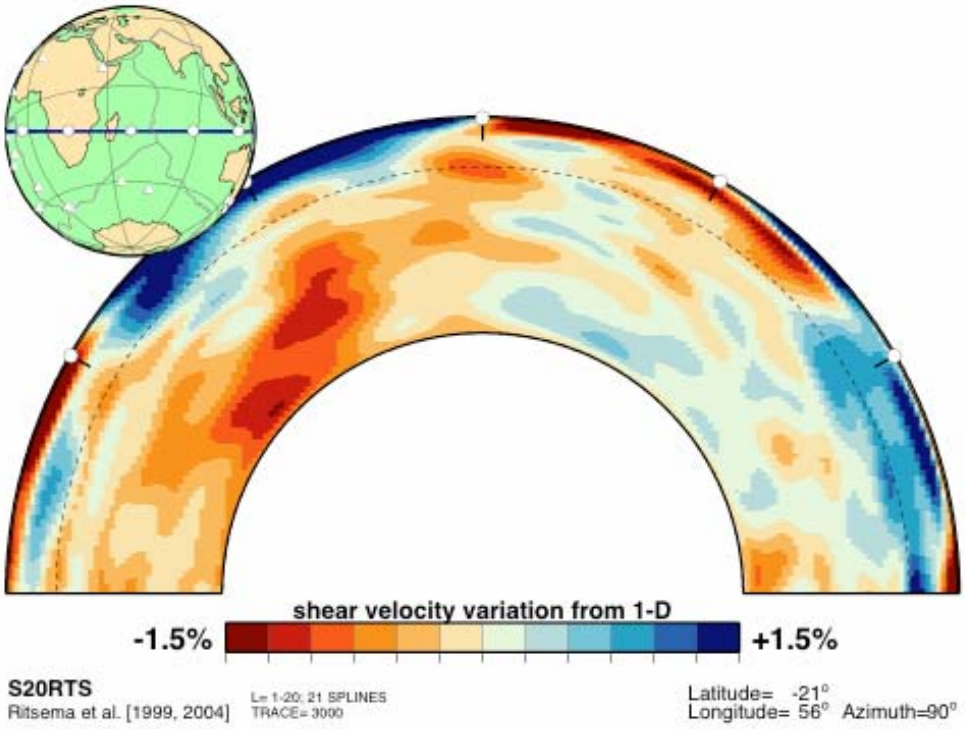
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -21°
Longitude= 56° Azimuth=90°

Figure 9c

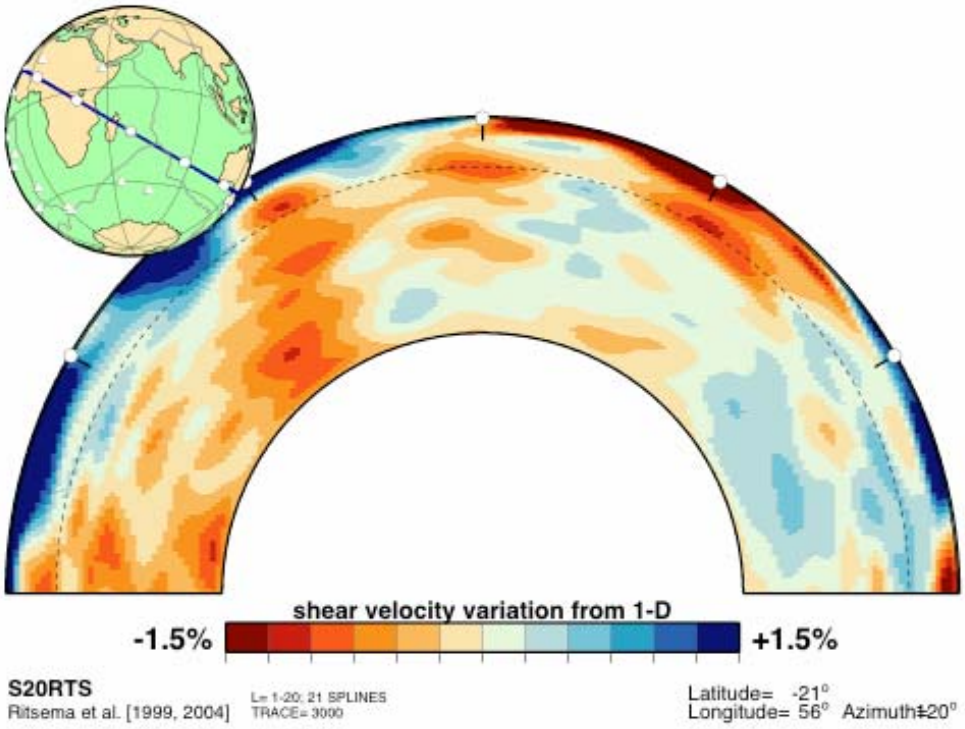
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -21°
Longitude= 56° Azimuth=20°

Figure 9d

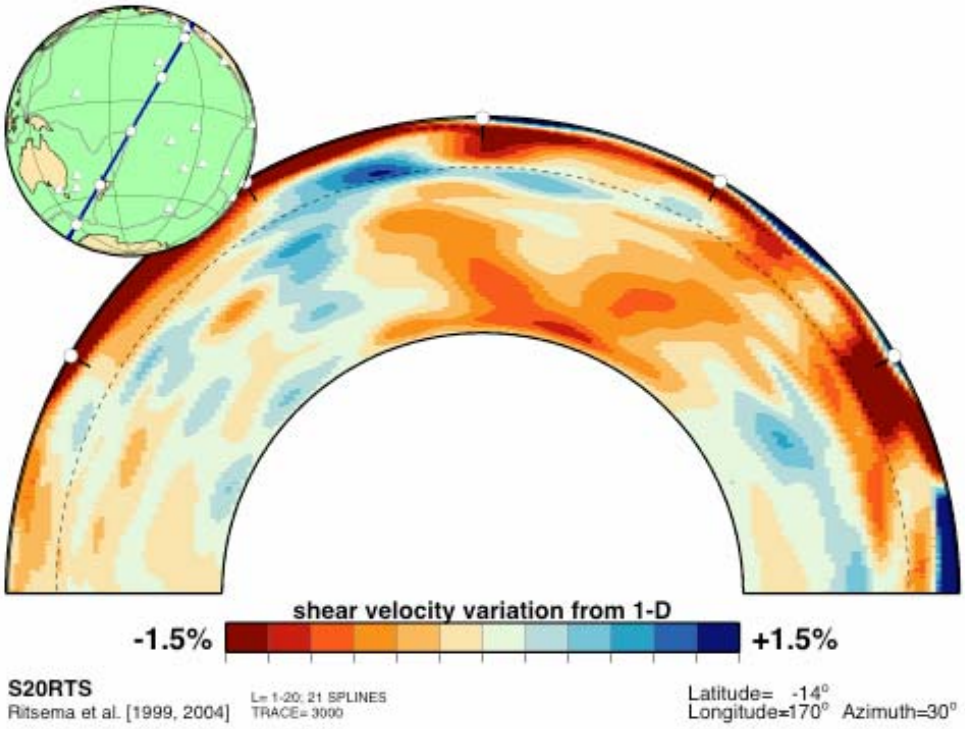
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -14°
Longitude=170° Azimuth=30°

Figure 10a

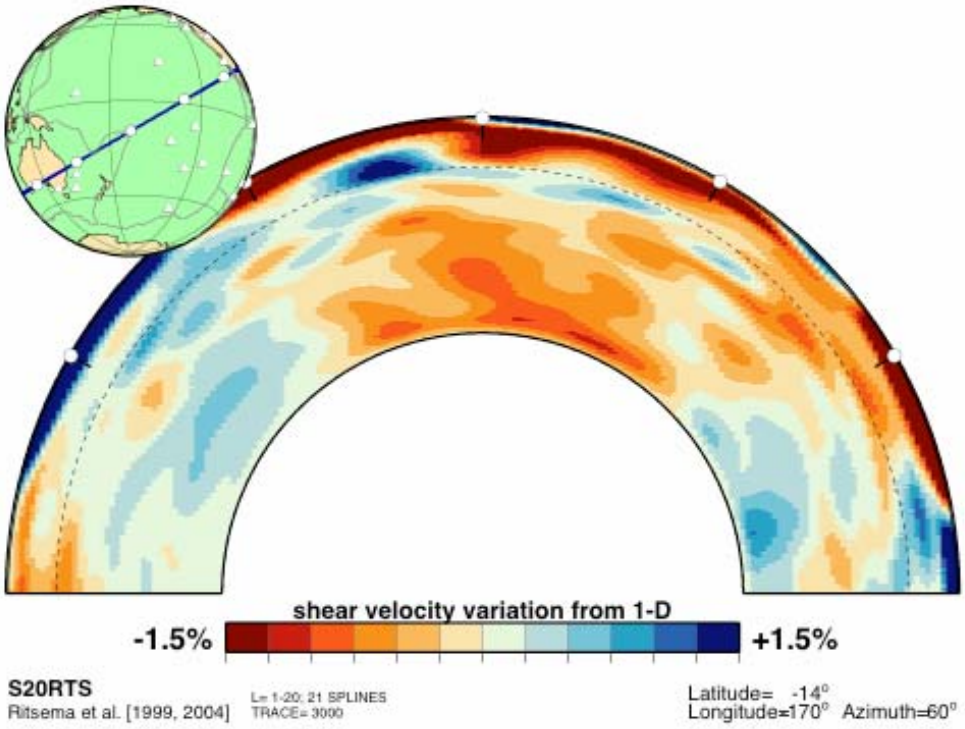
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -14°
Longitude=170° Azimuth=60°

Figure 10b

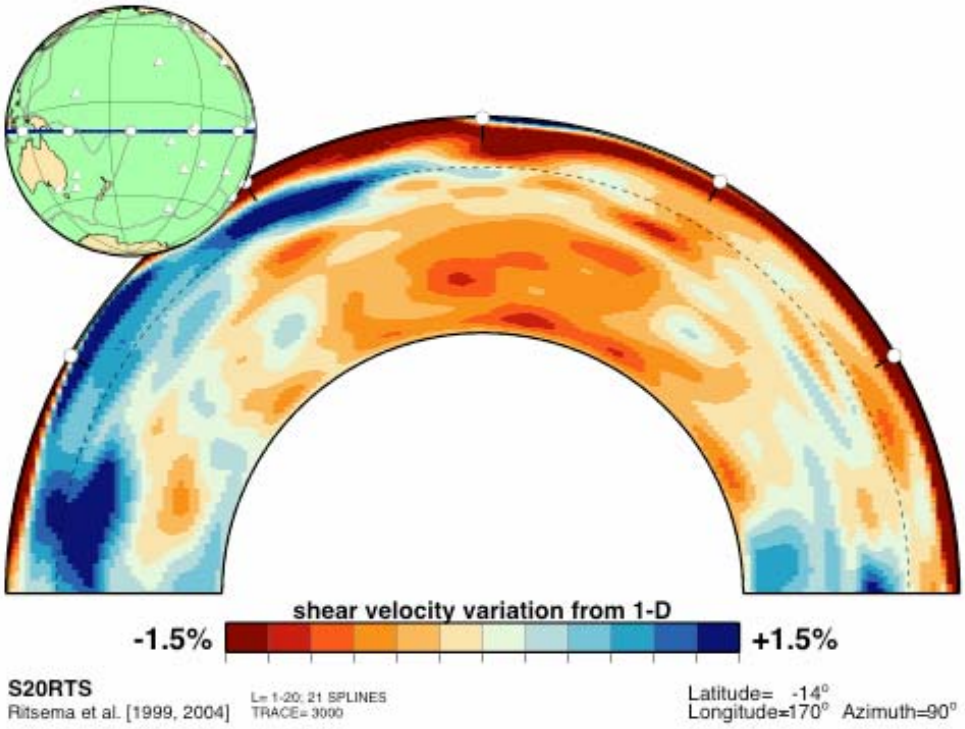
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -14°
Longitude=170° Azimuth=90°

Figure 10c

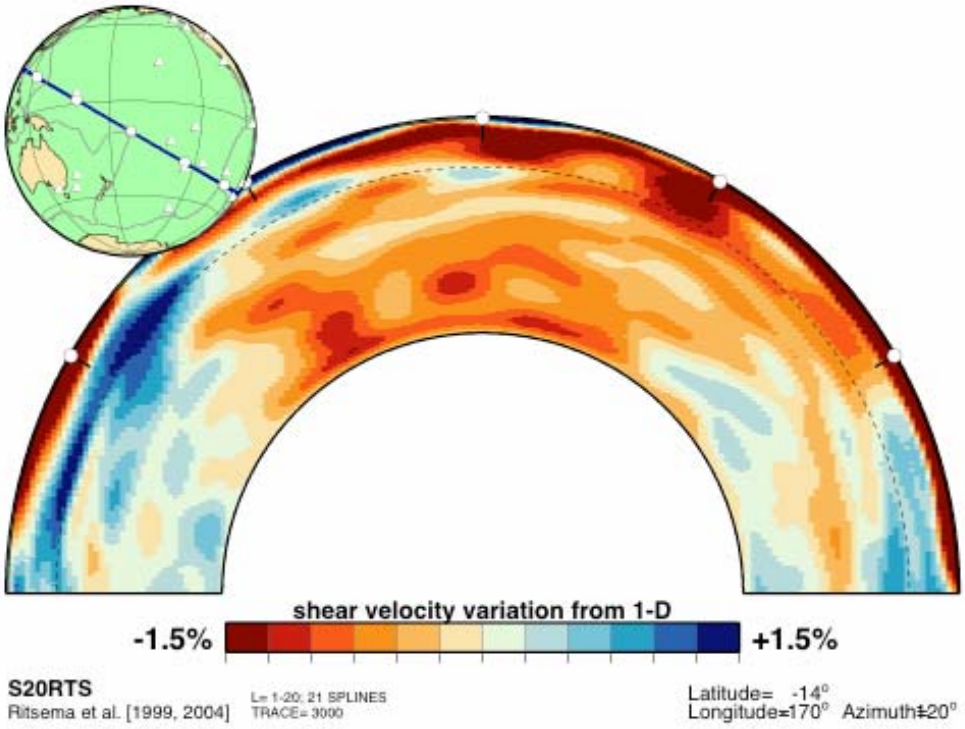
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -14°
Longitude=170° Azimuth=20°

Figure 10d

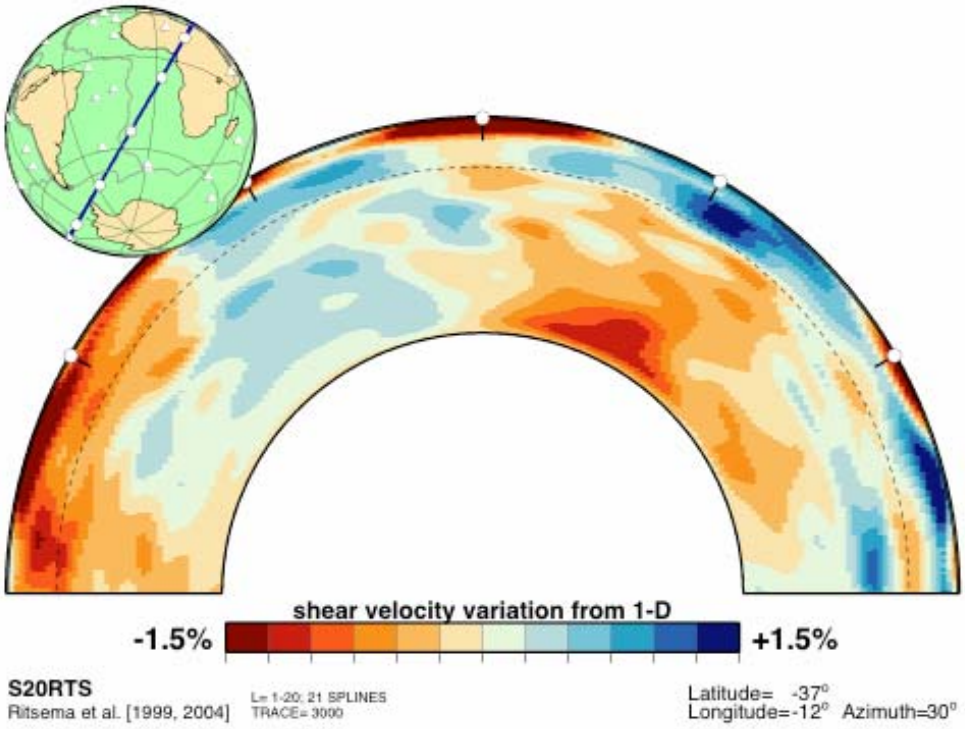
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -37°
Longitude=-12° Azimuth=30°

Figure 11a

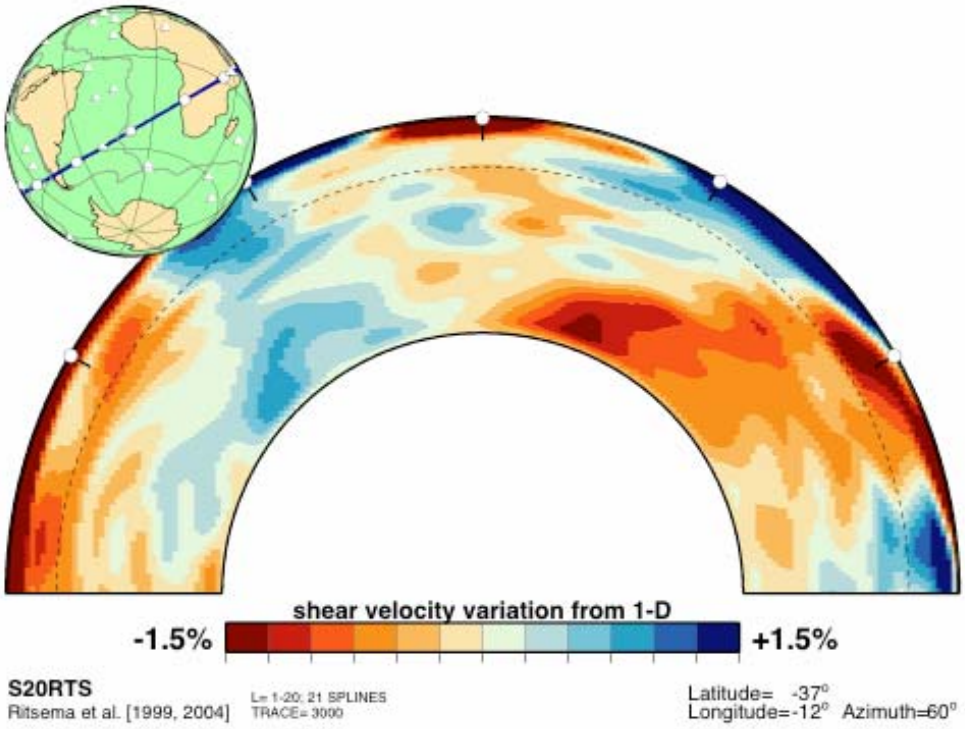
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -37°
Longitude=-12° Azimuth=60°

Figure 11b

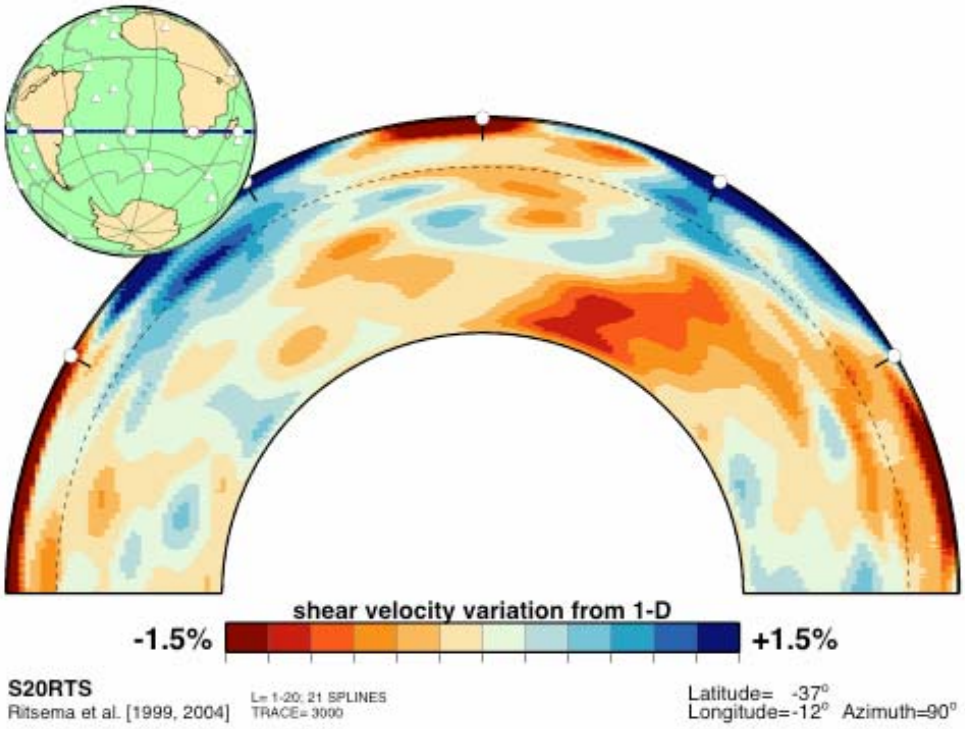
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -37°
Longitude=-12° Azimuth=90°

Figure 11c

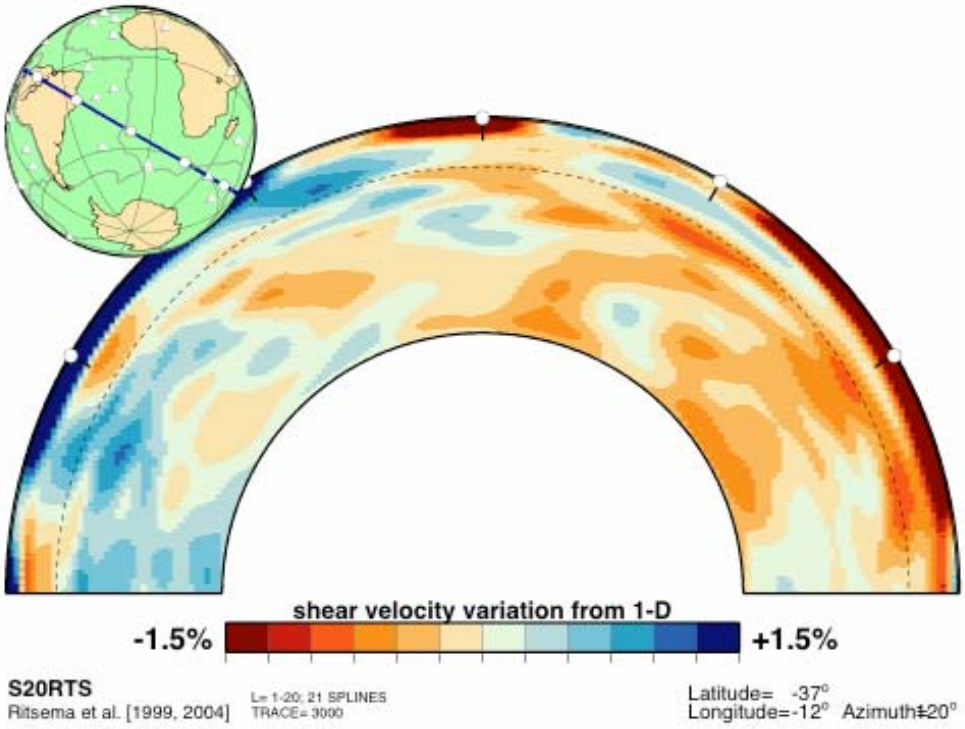
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= -37°
Longitude=-12° Azimuth=20°

Figure 11d

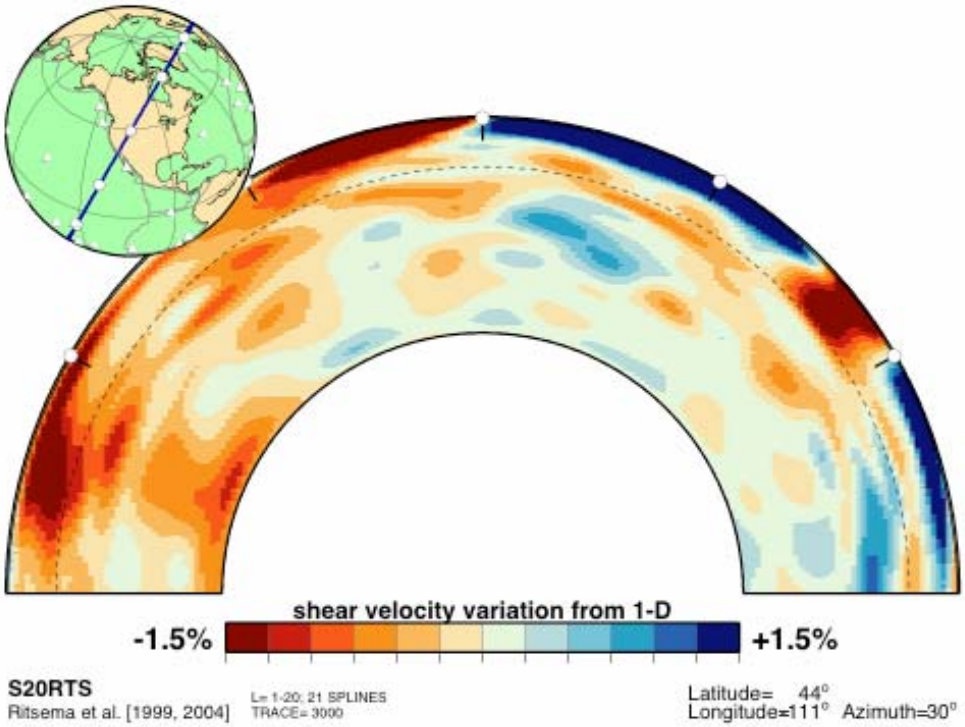
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= 44°
Longitude=111° Azimuth=30°

Figure 12a

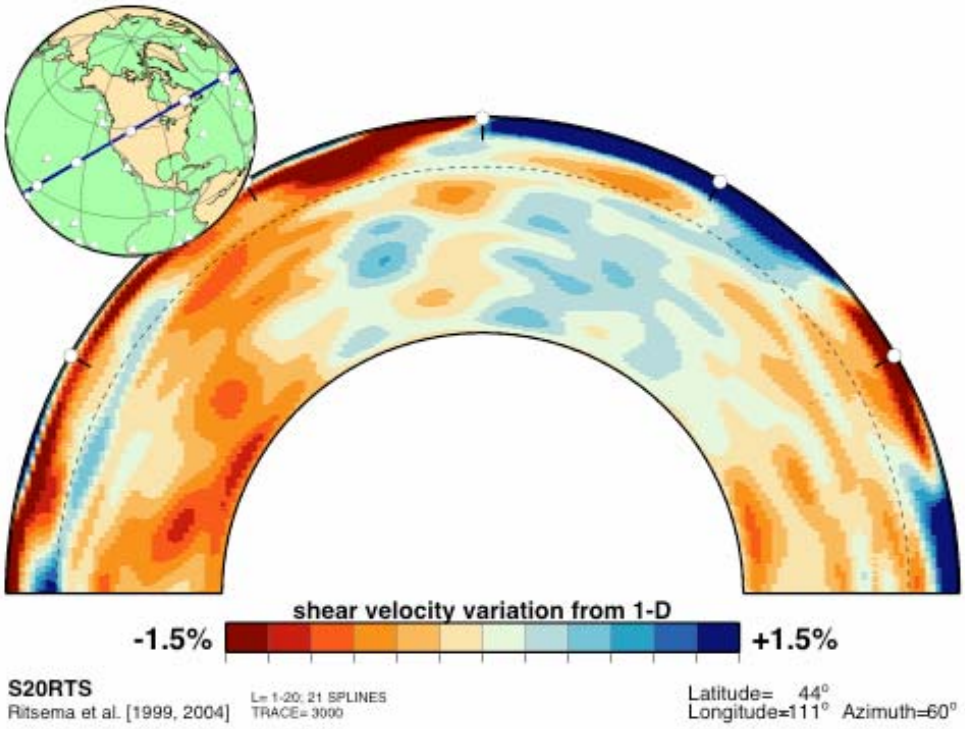
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= 44°
Longitude=111° Azimuth=60°

Figure 12b

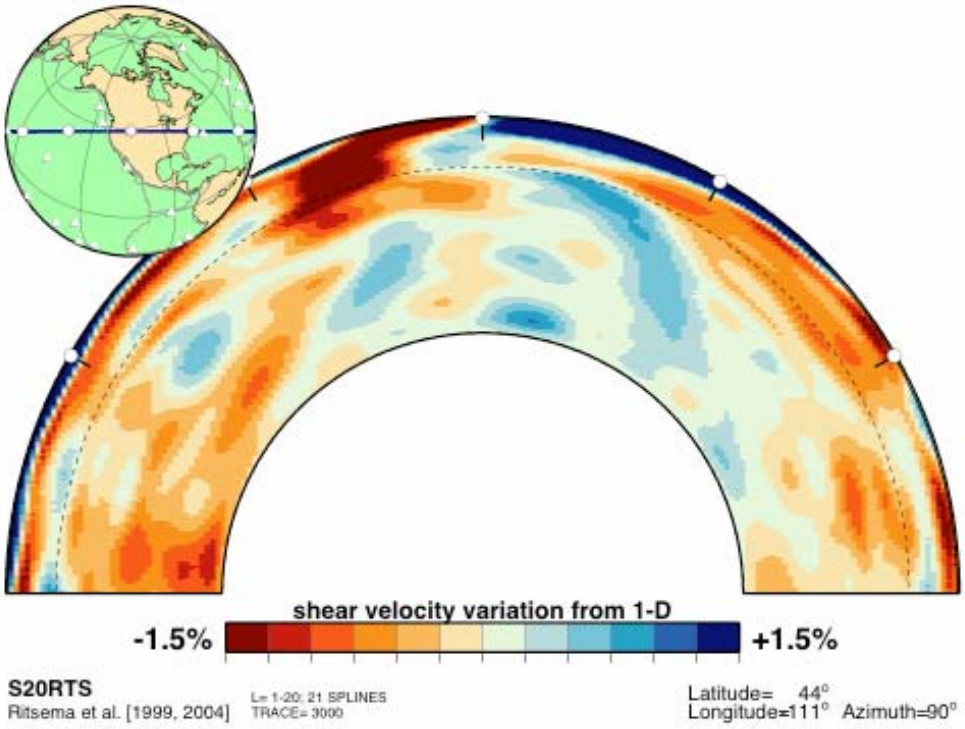
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= 44°
Longitude=111° Azimuth=90°

Figure 12c

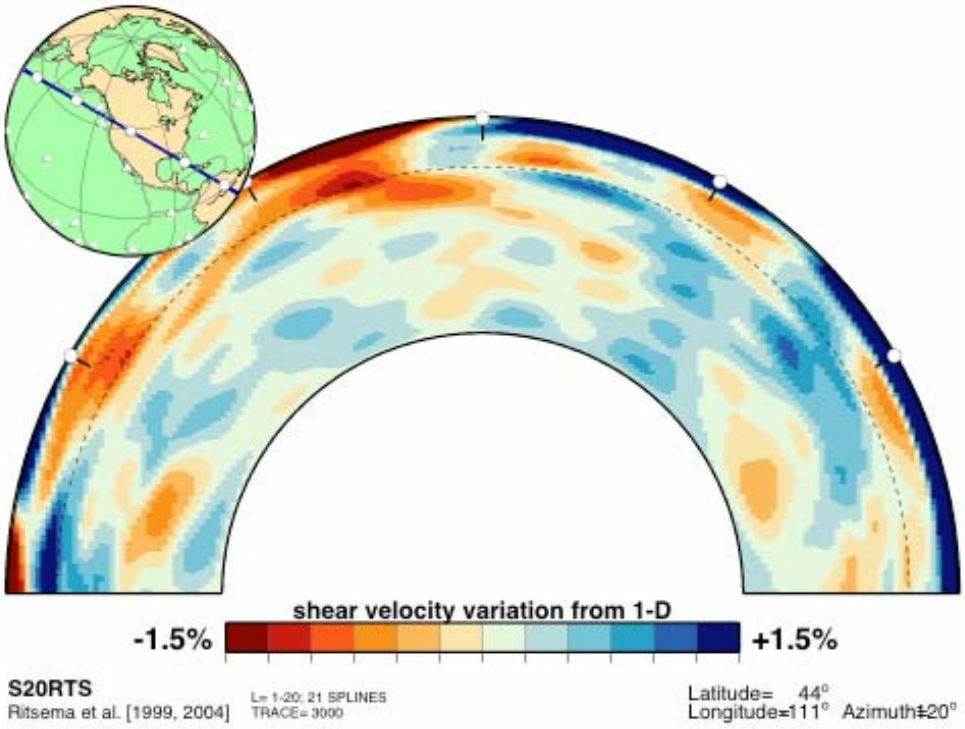
shear velocity variation from 1-D
-1.5%
+1.5%
S20RTS
Ritsema et al. [1999, 2004]
L= 1-20; 21 SPLINES
TRACE= 3000
Latitude= 44°
Longitude=111° Azimuth=20°

Figure 12d