

How can seismology help constrain the nature of plumes and upwellings?

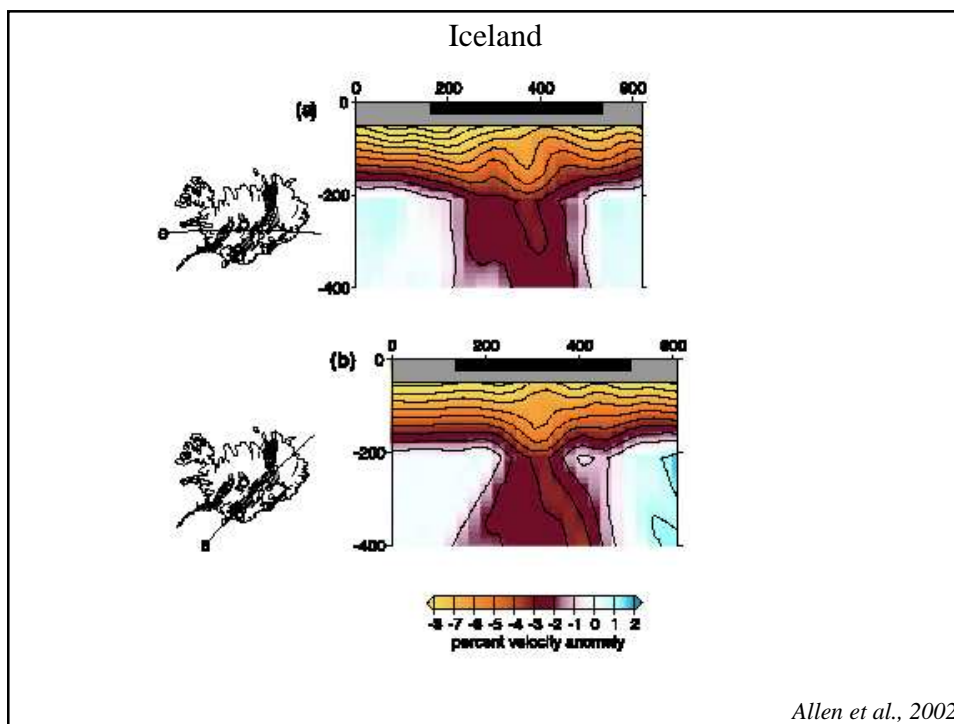
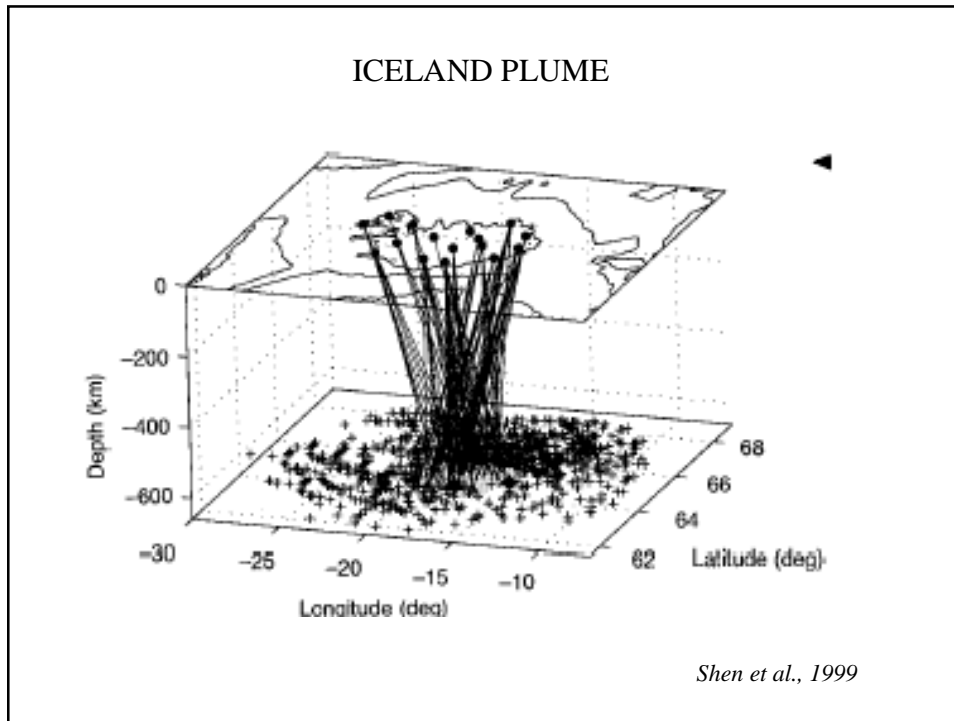
Barbara Romanowicz
UC Berkeley

CIDER'04-KITP

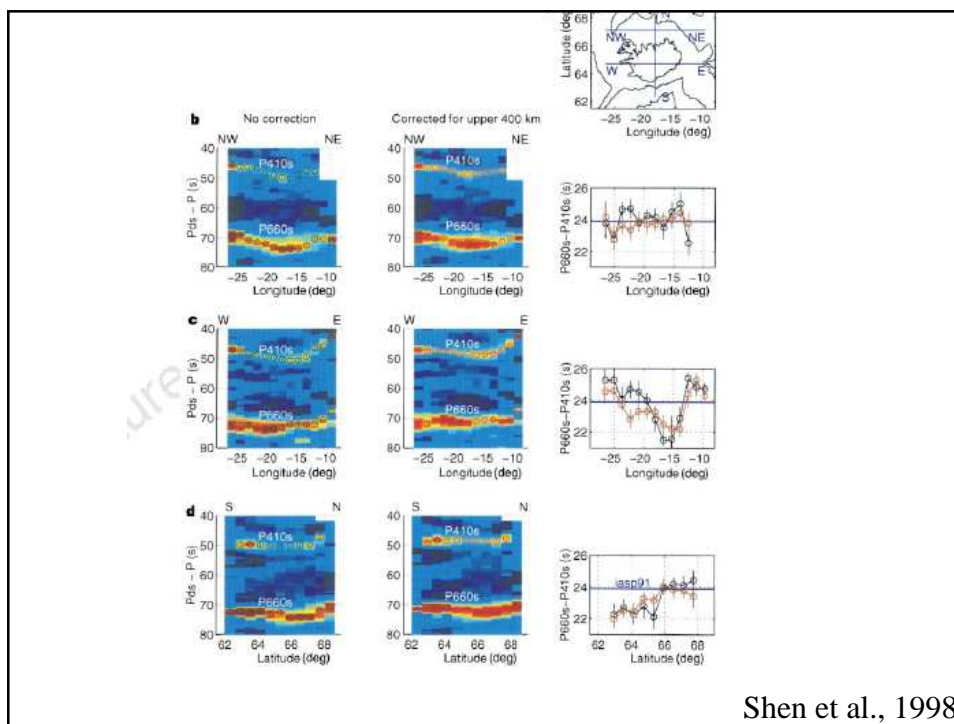
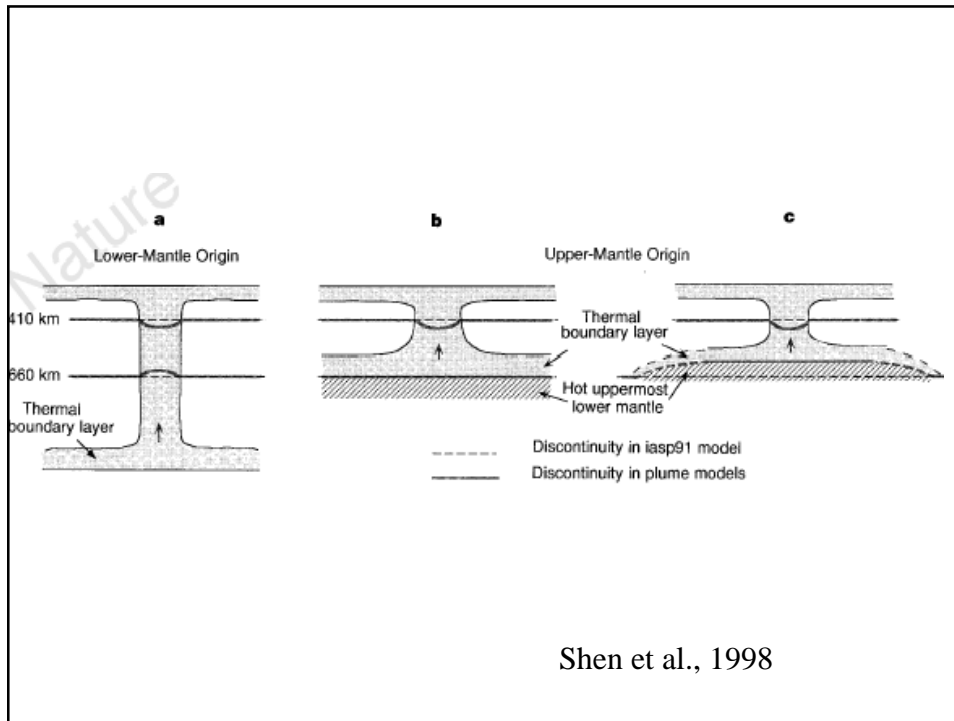
Possible seismological approaches

- Local tomography
- Converted phases/receiver functions
- Global tomography
 - elastic velocity, anisotropy, attenuation
- forward modelling of waveforms

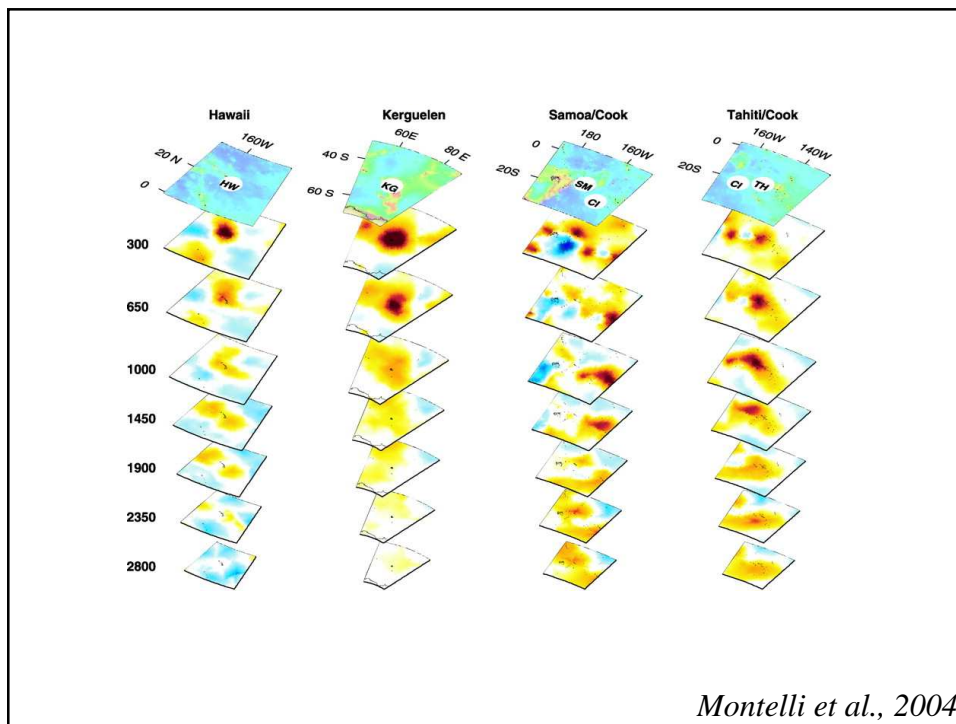
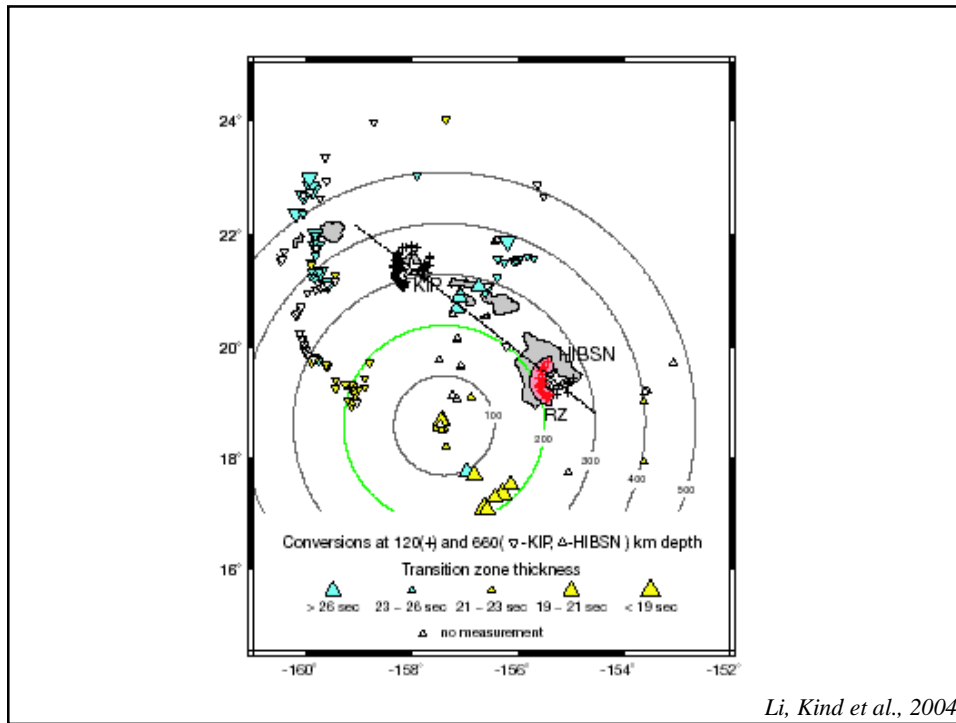
Plumes/upwelling/melting: Seismology



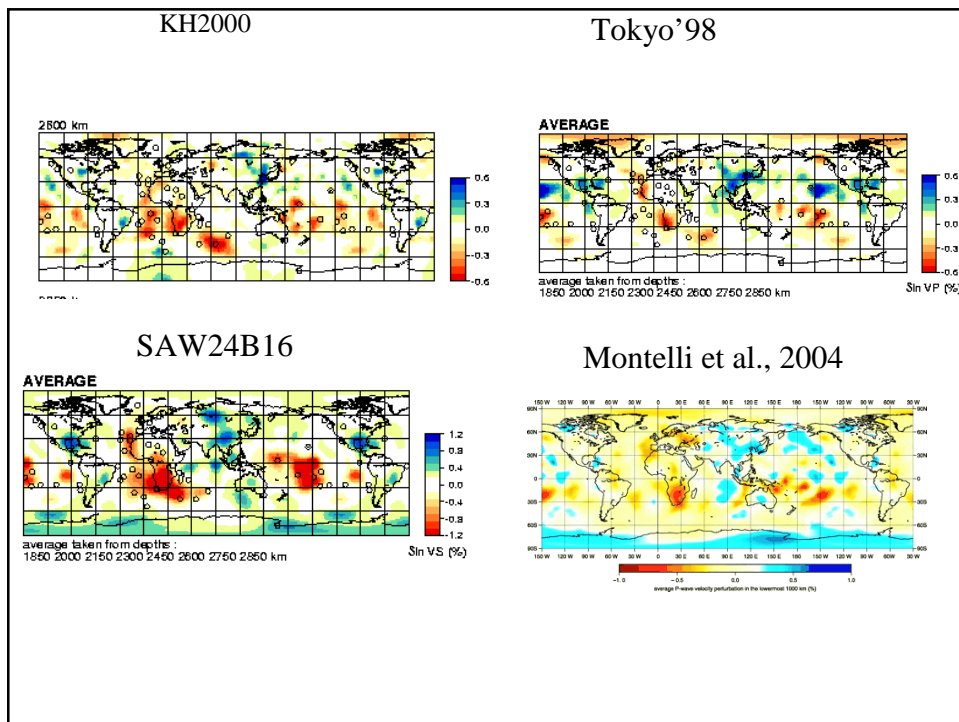
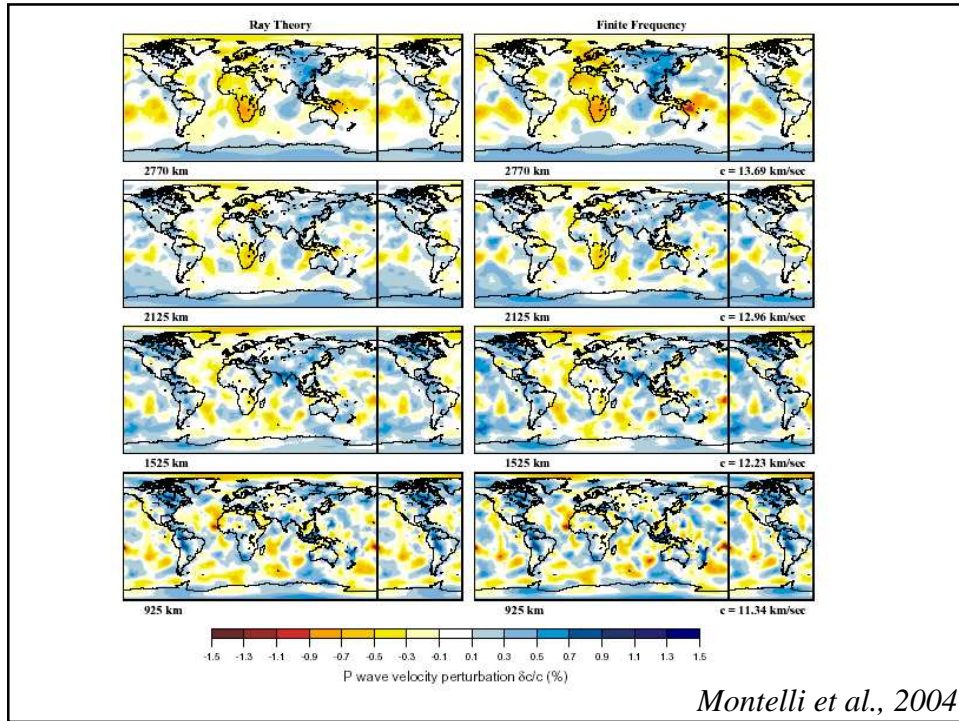
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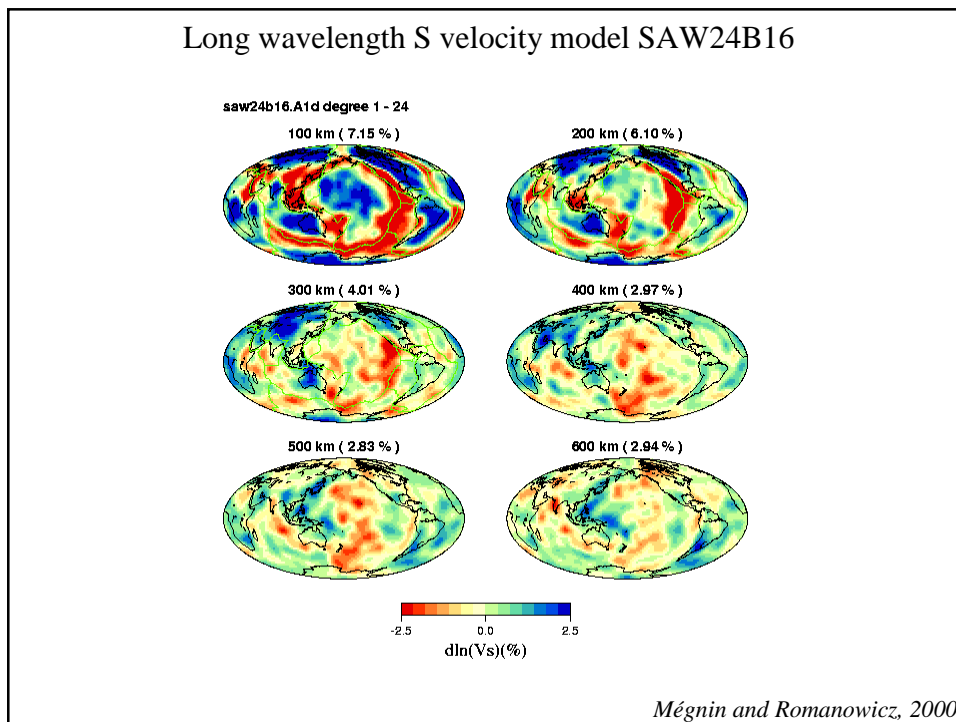
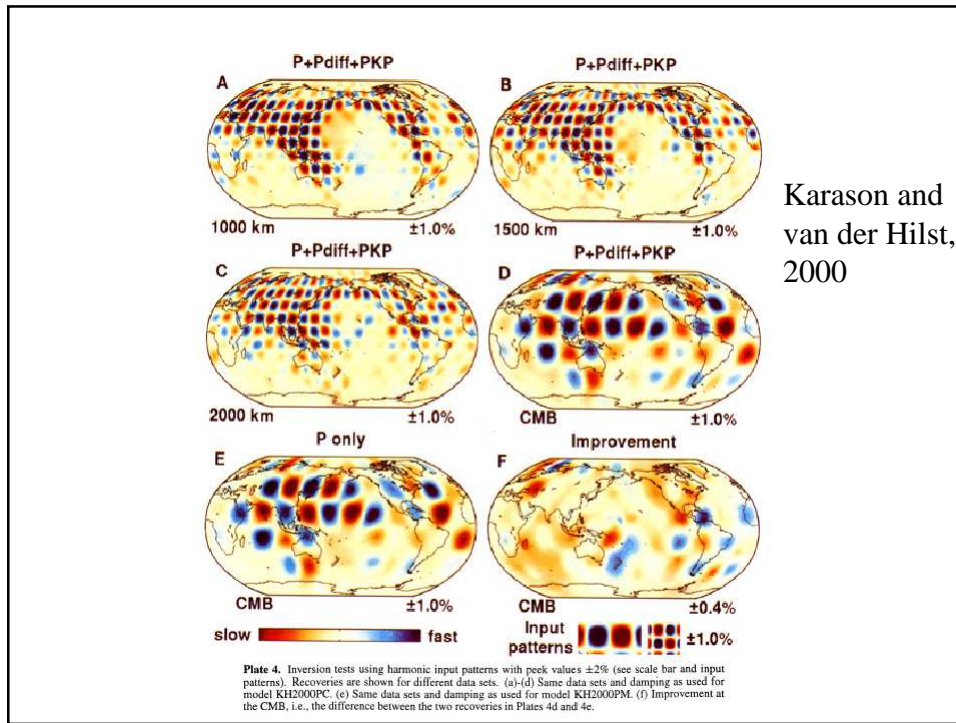


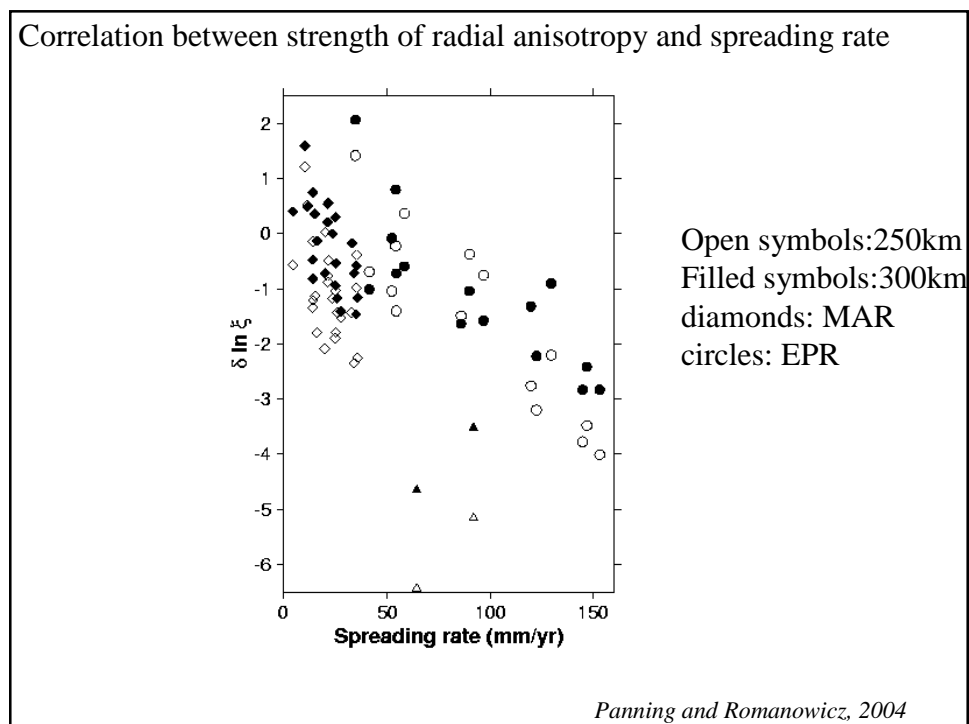
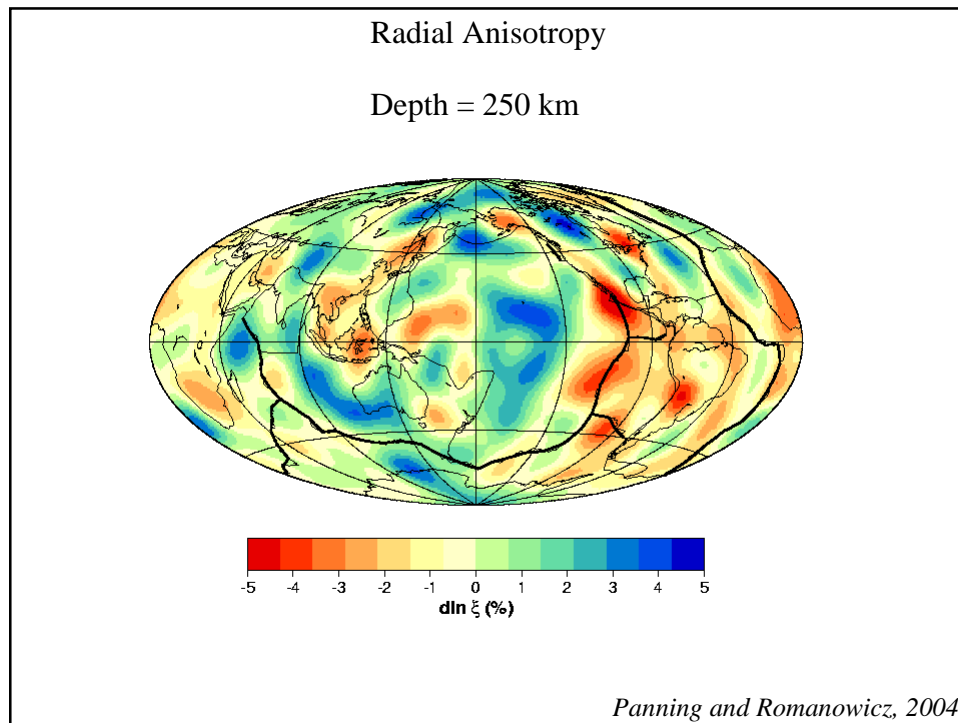
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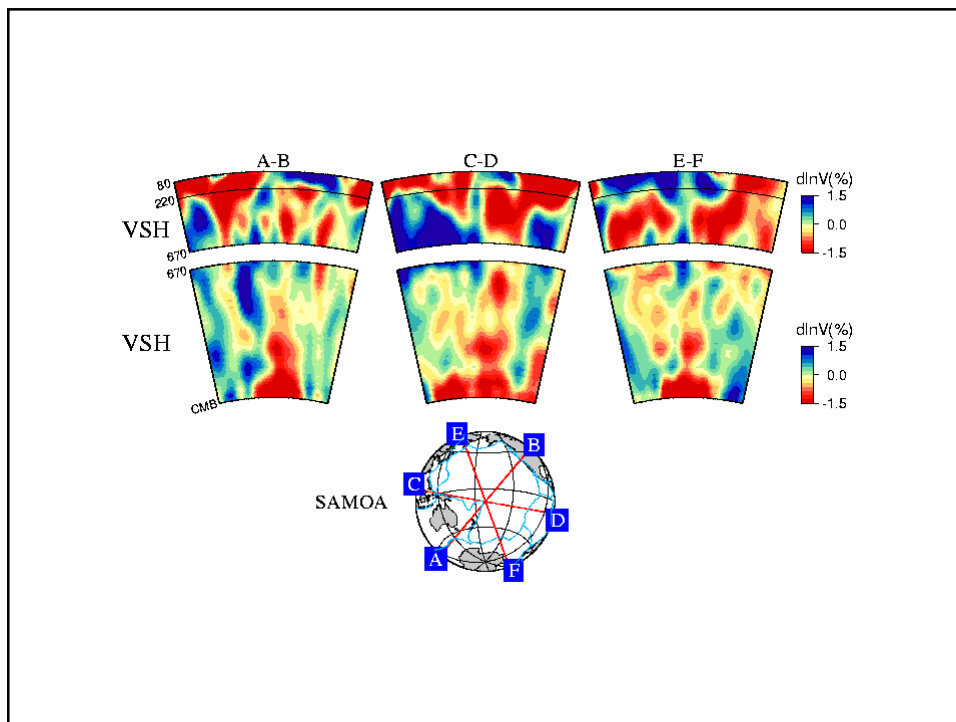
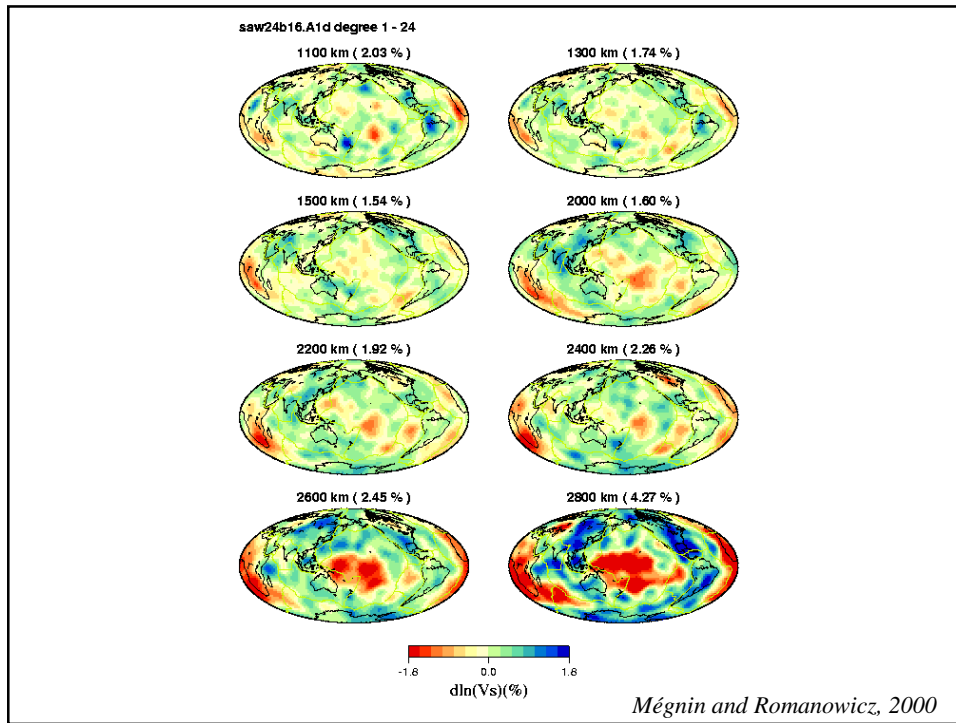
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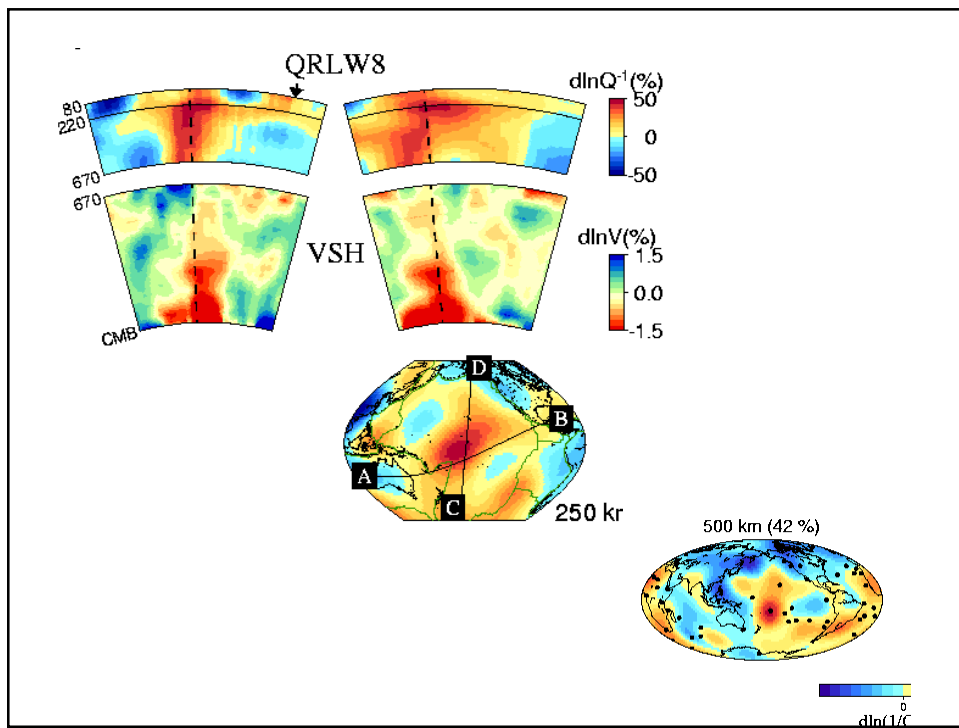
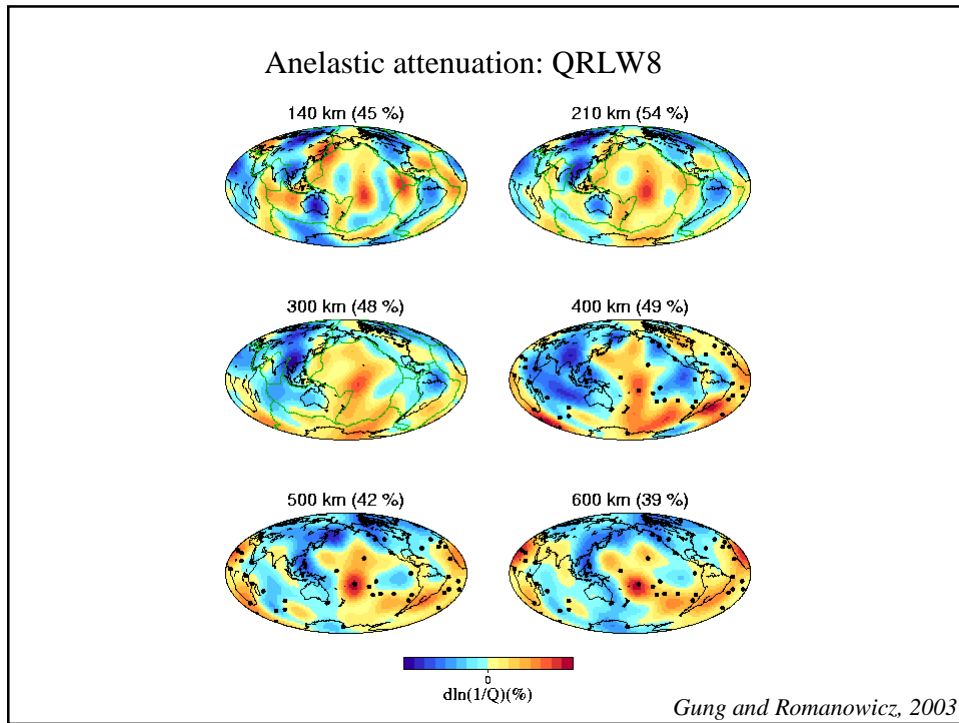




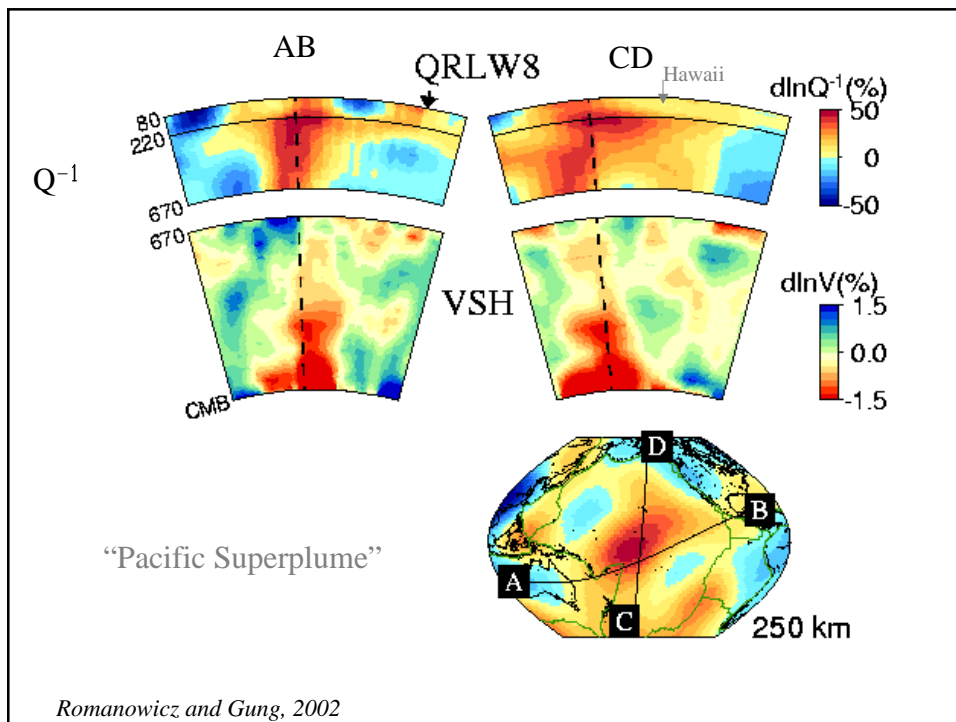
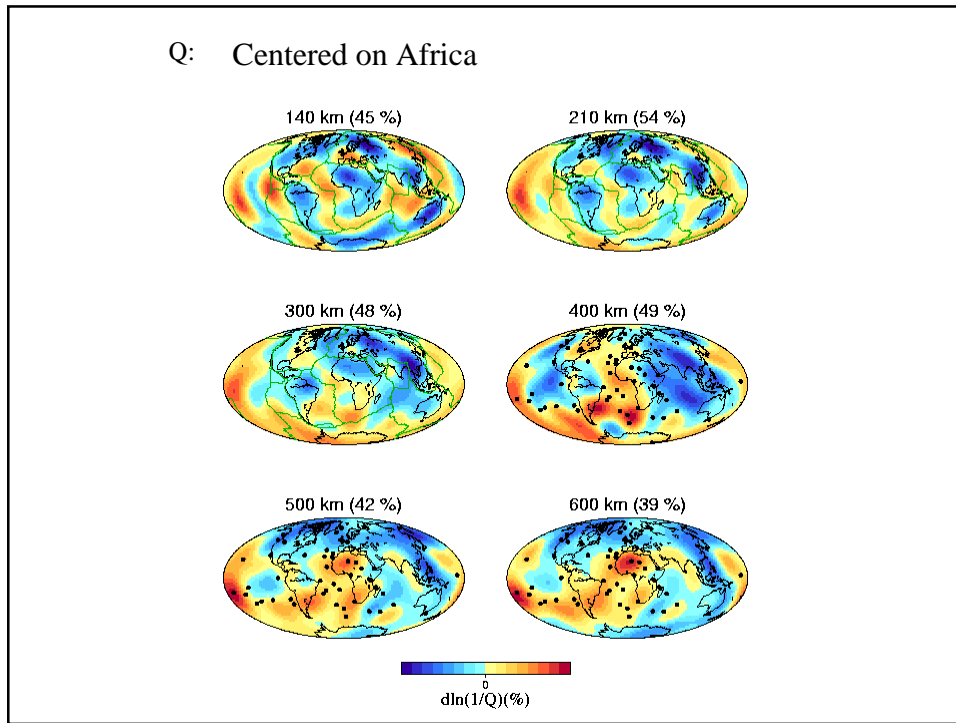


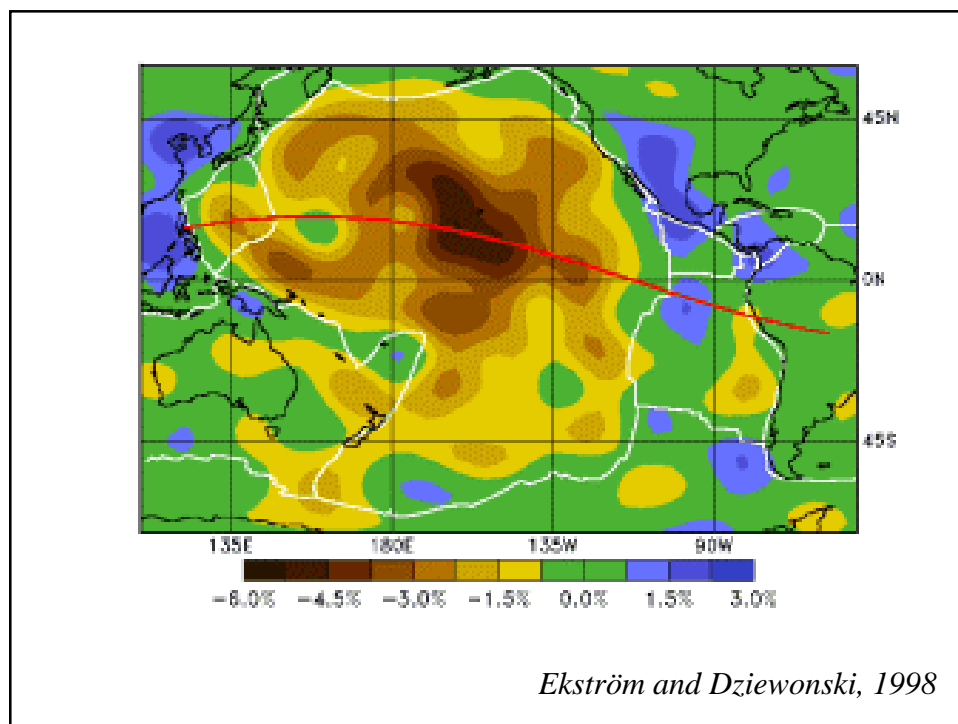
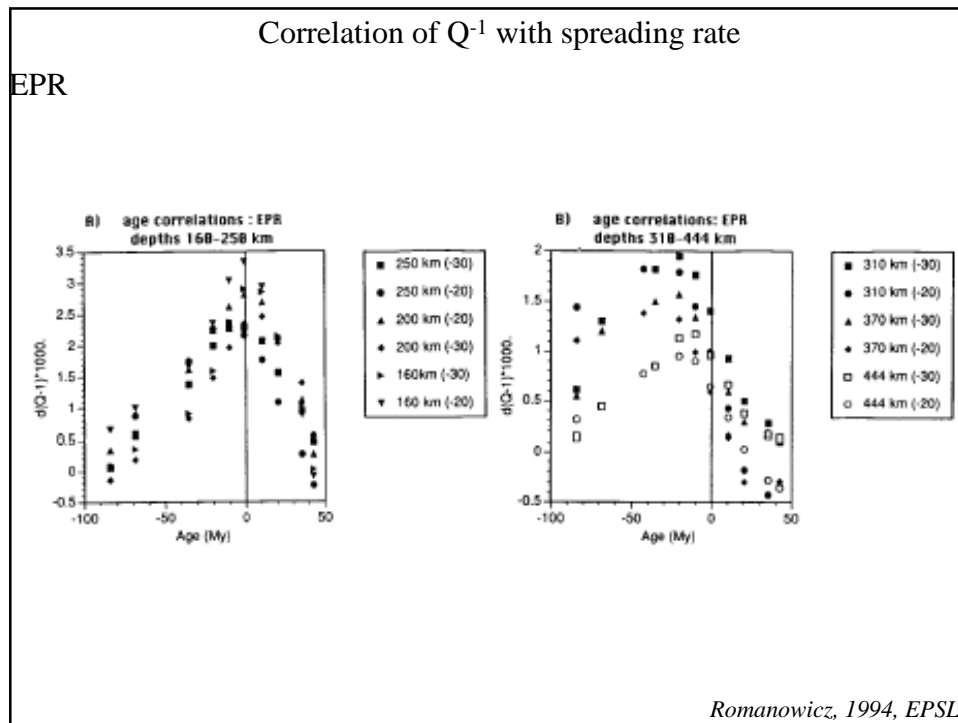
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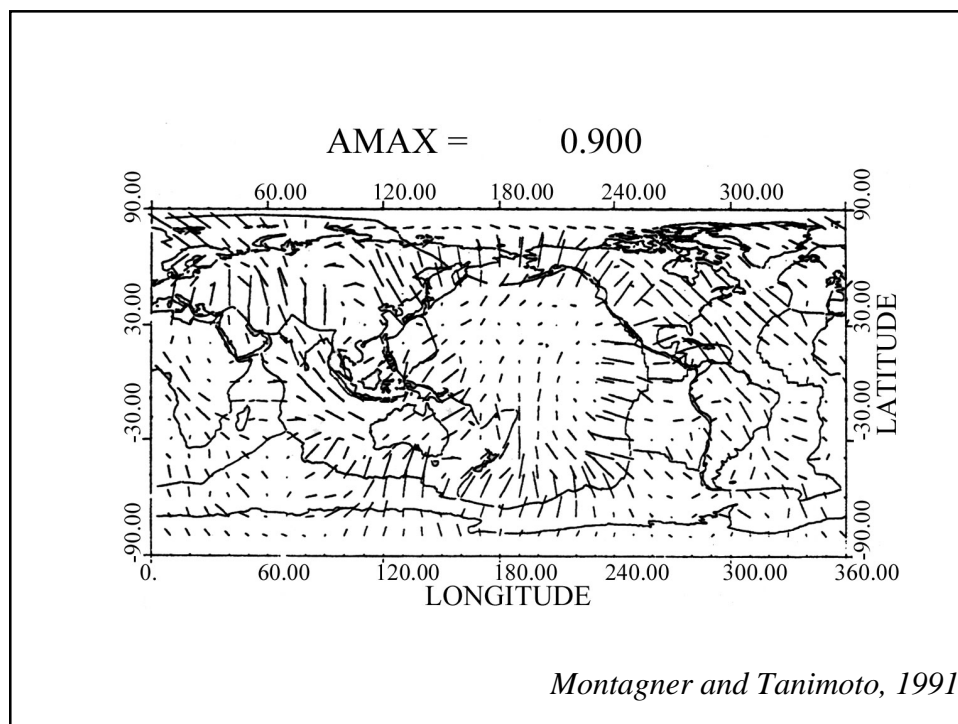
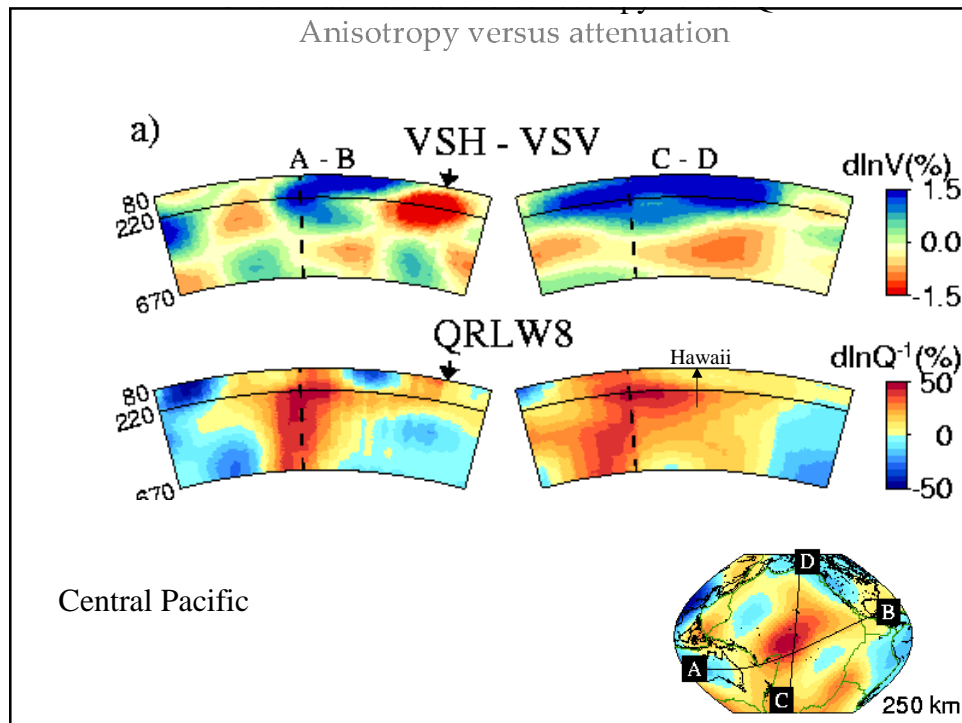


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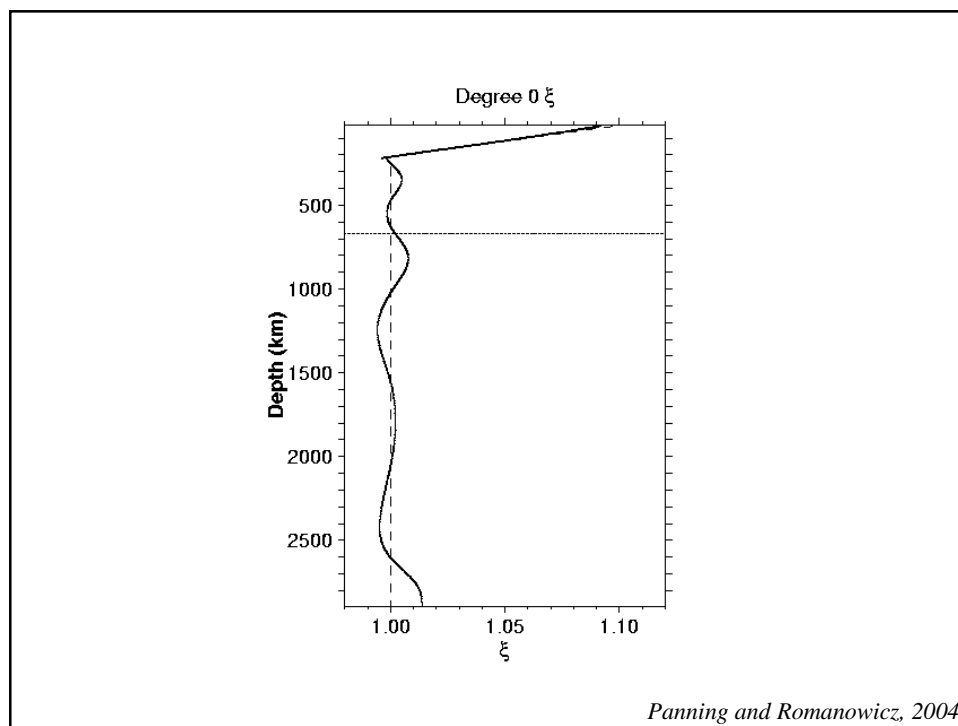
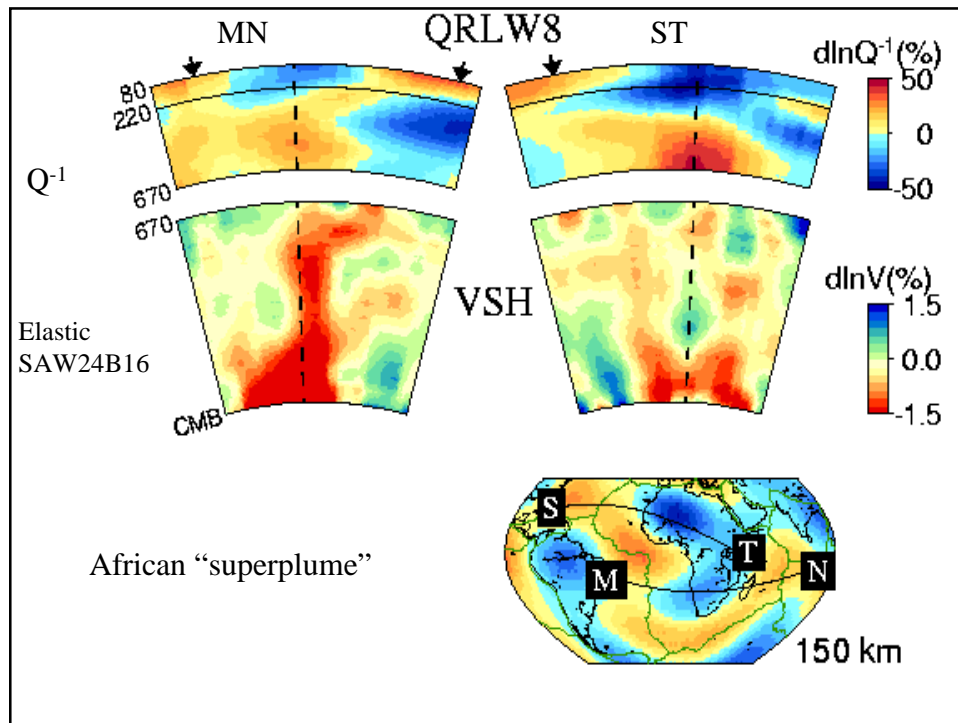


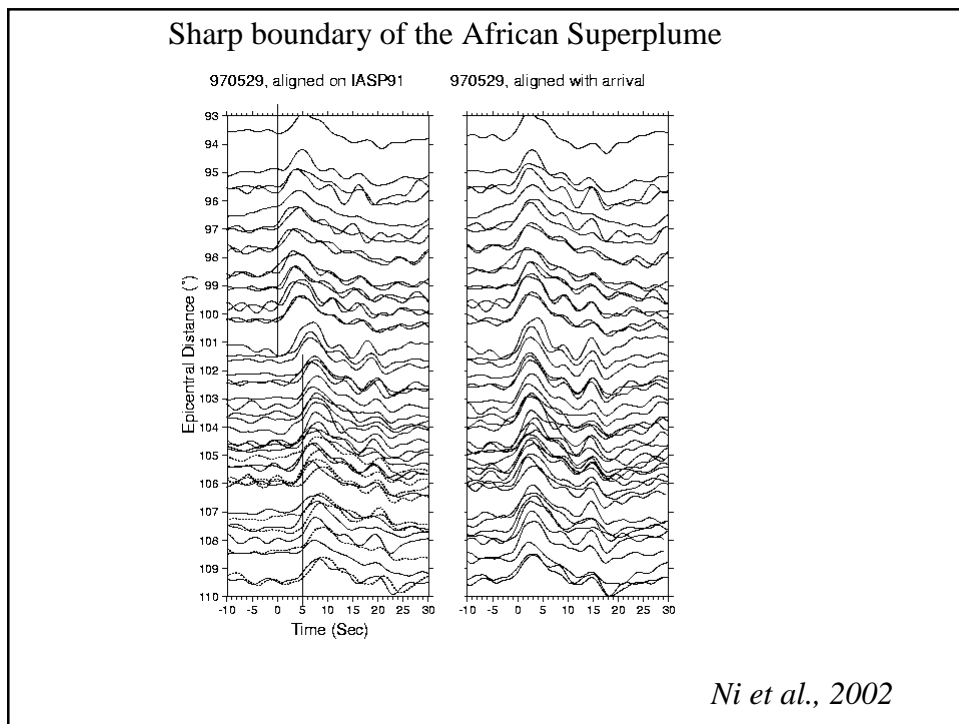
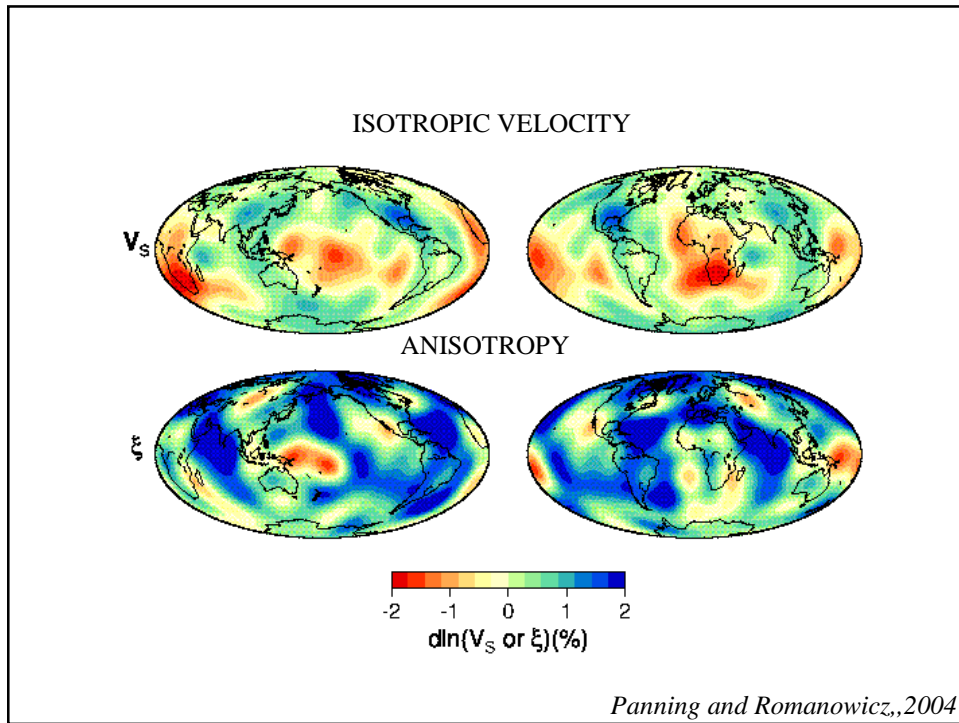


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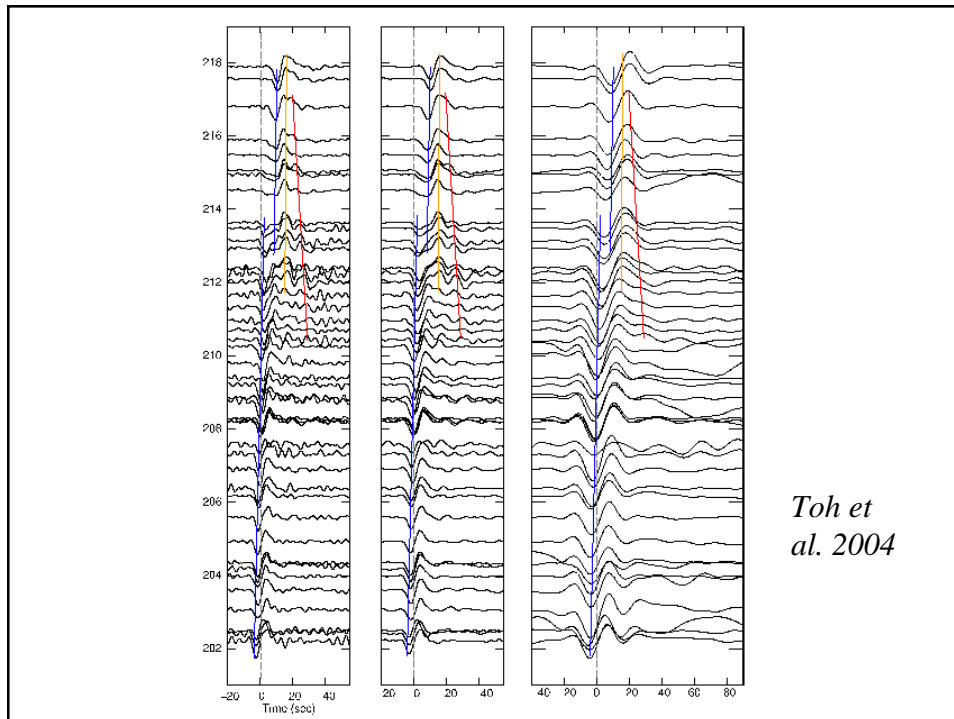
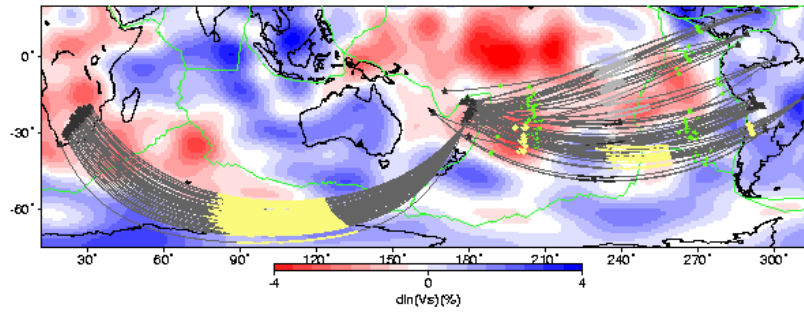


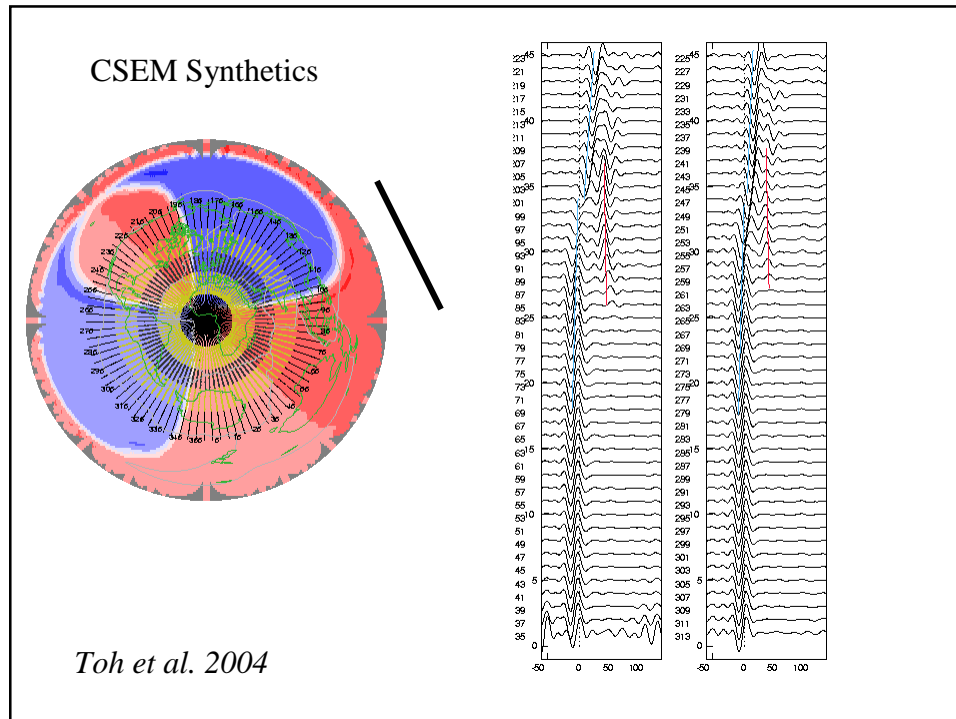
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Forward modelling of fine scale structure





Conclusions

- Combination of elastic, anelastic and anisotropic tomography at the global scale can help constrain large scale flow - in particular the morphology of upwellings
- Need a very large aperture array centered in the Pacific ocean !!

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