



UNIVERSITY OF  
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# Variations in lithospheric structure across the Indo-Eurasian collisional belt

Keith Priestley<sup>1</sup> and Amy Gilligan<sup>2</sup>

<sup>1</sup>Bullard Laboratories, Department of Earth Sciences, University of Cambridge;

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BSM2017, 6 April 2017



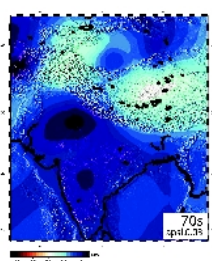
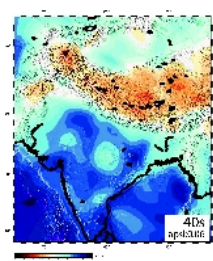
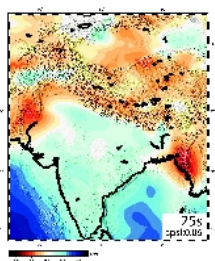
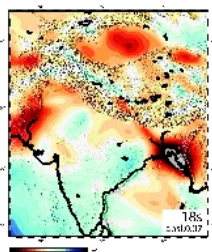
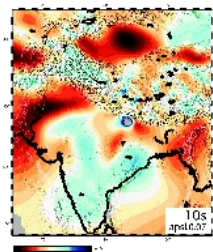
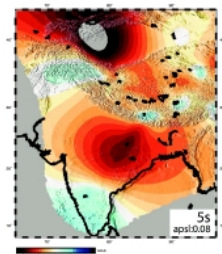
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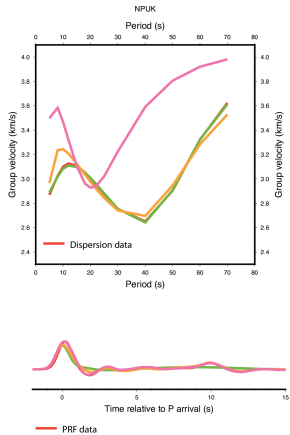
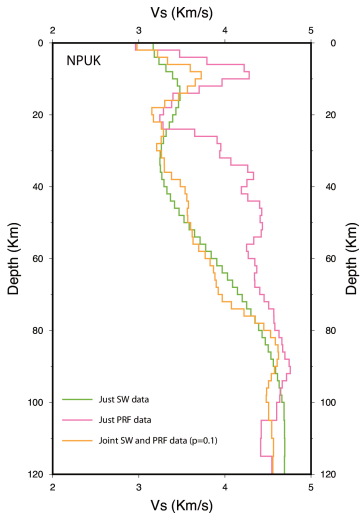
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**BMS2017 — 7 April 2017**

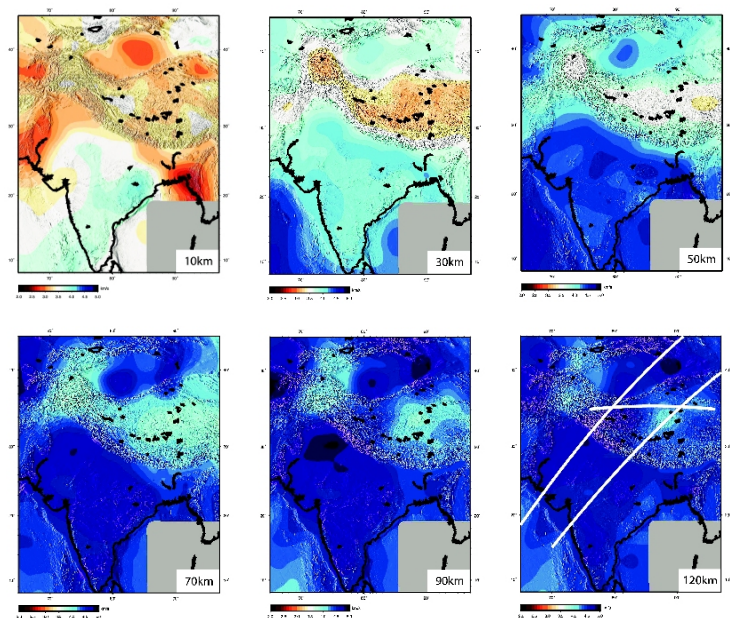
# Fundamental mode group velocity maps



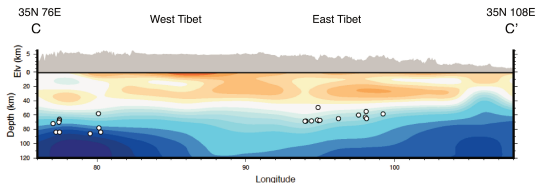
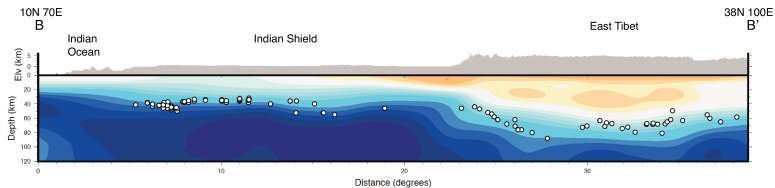
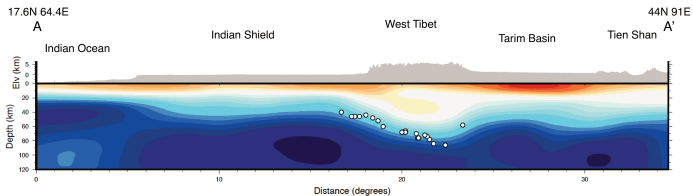
# Receiver function / dispersion analysis



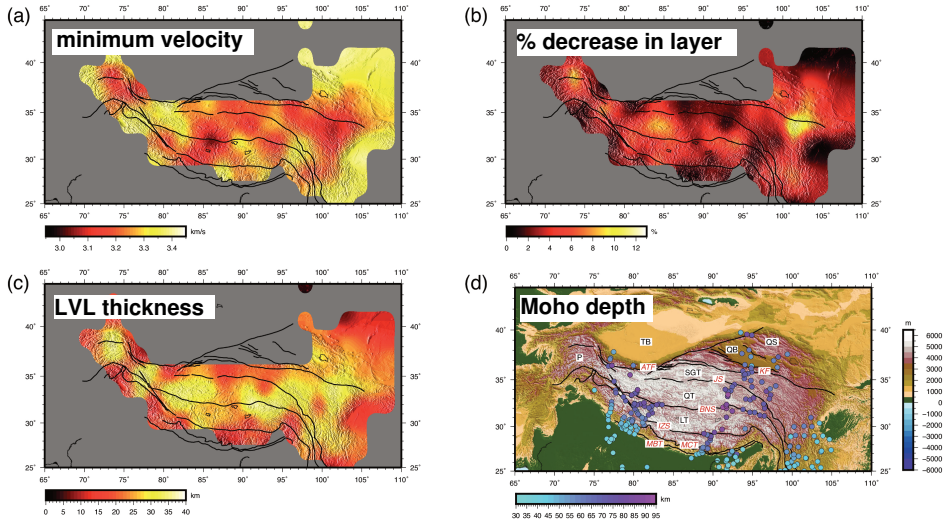
# Crustal shear wave velocity maps



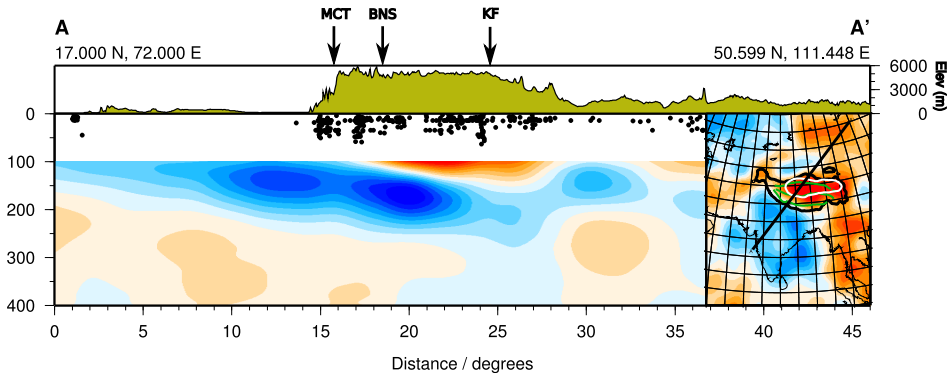
# Crustal shear wave velocity cross-sections



# Crustal shear wave low velocity layer



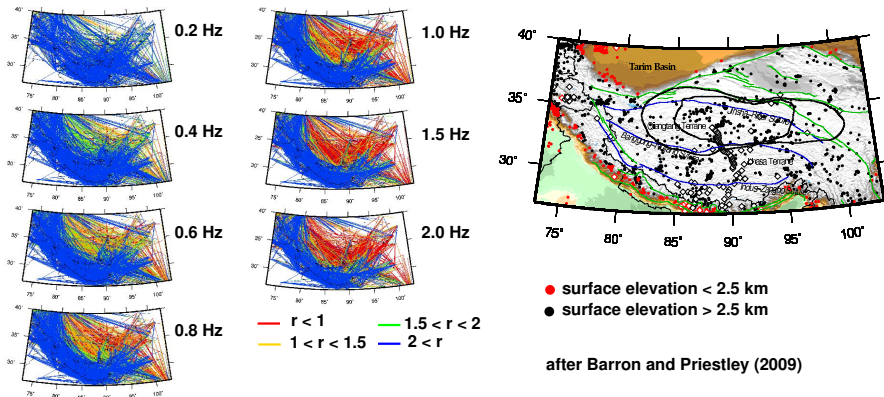
# Upper mantle shear wave velocity cross-sections



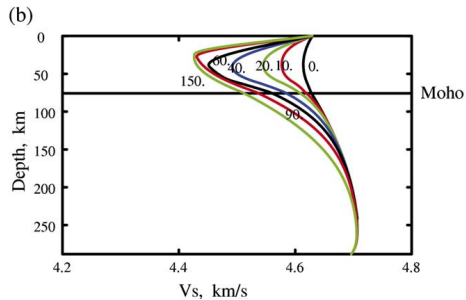
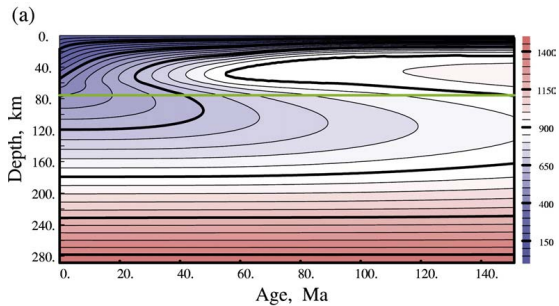


# Sn propagation

## Sn propagation efficiency



# Crustal heating



# Summary

- ▶ The analysis of a large data set of high frequency fundamental mode surface wave group velocities, receiver functions, and multi-mode surface waveform fitting,
- ▶ Pervasive low shear wavespeed layer throughout the Tibetan mid-crust,
- ▶ Low shear wavespeed upper mantle beneath northern Tibet overlying a fast shear wavespeed upper mantle,
- ▶ Radioactive heating of the thickened Tibetan crust has resulted in crustal temperature inversion and low wavespeeds of the upper mantle beneath northern Tibet.