Ambient seismic noise monitoring in Chuetsu, Japan and the area affected by wave speed variations

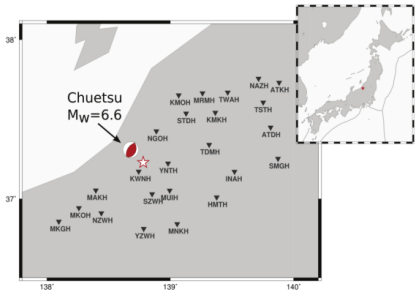
C. Hadziioannou*, E. Larose, Y. Aoki, T. Takeda and M. Campillo

*Hadzii@geophysik.uni-muenchen.de

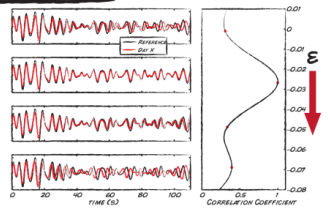
Data Used :

Hi-Net borehole Tiltmeters:
- 24 stations - 276 station pairs
- whitening : [0.1 0.3] Hz
- daily xcorrs : 2004 and 2005
- reference GF : stack of 2 years

October 23, 2004: Mw 6.6 Chuetsu EQ

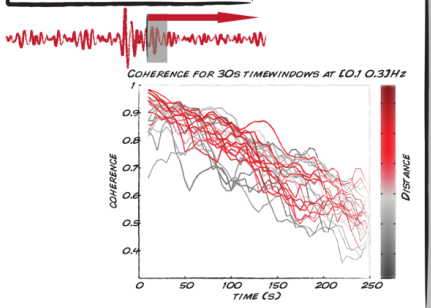


Stretching :

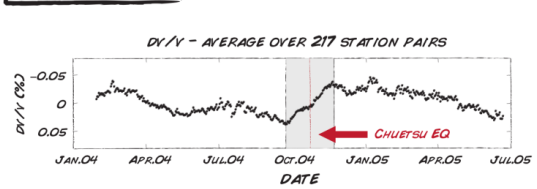


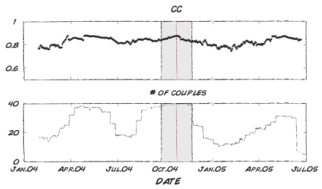
Stretch reference signal: time -> τ(1+ε)
Compare to day signal: correlation coefficient (CC)
ε at maximum CC corresponds to Δv/v

Coda Coherence :

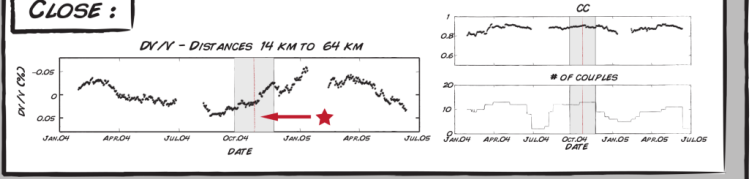


Results :

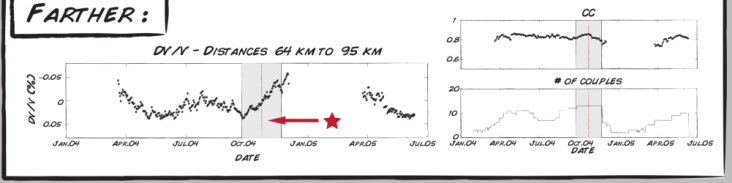




Close :



Farther :



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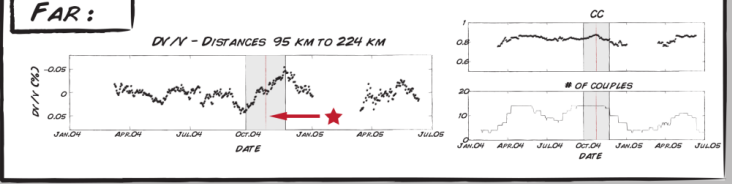
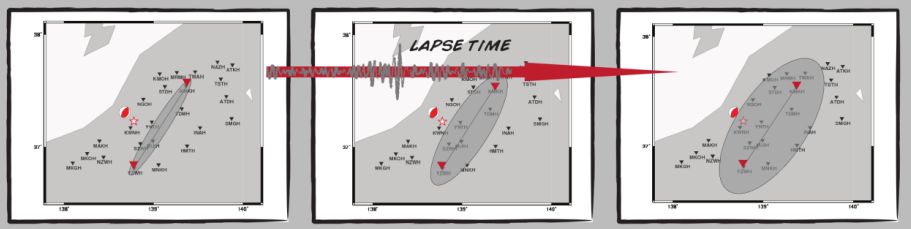


Distance to epicenter

Scattering Halo :

$$d_{halo} = \sqrt{Dt} \qquad D = \frac{v l^*}{2}$$



Conclusions :

- Coseismic wave speed change same amlitude for all epicentral distances ; spatially exended change ?
- Regionalisation proves difficult: Coda waves sample a large 3D volume

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To be continued...

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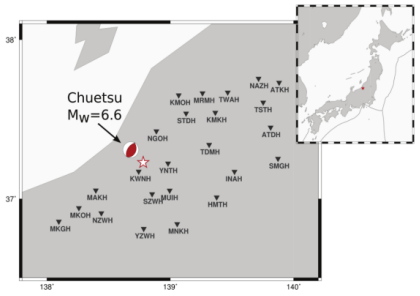

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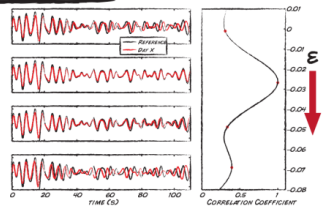

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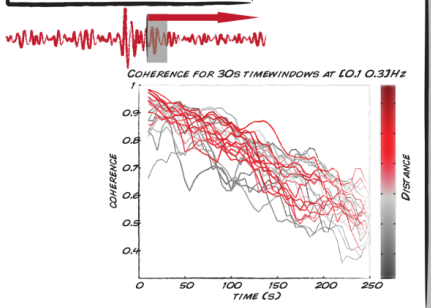

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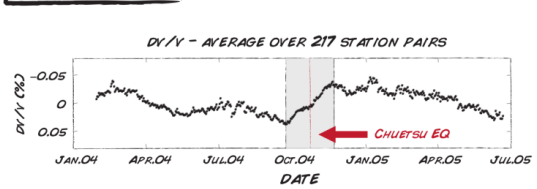

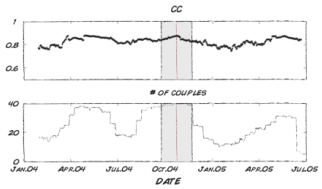

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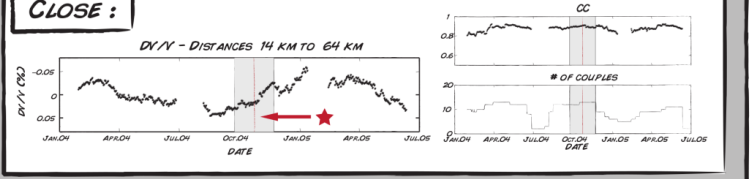

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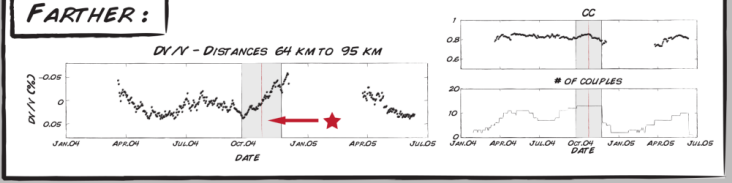

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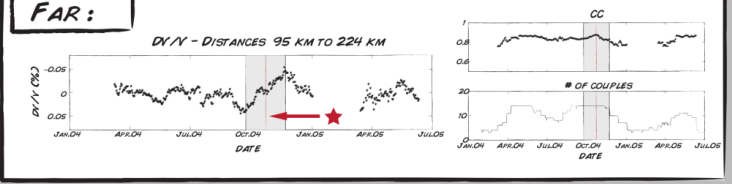

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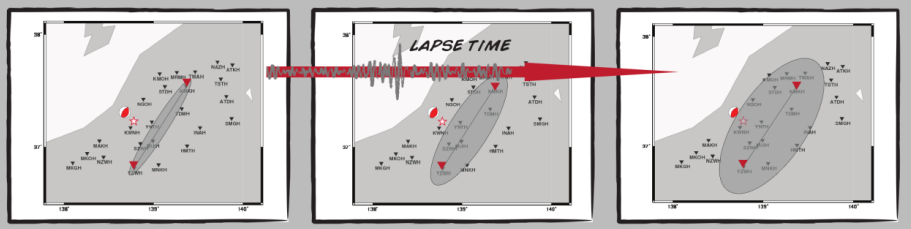

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