Convert from Depth to Time Domain

NZ 3D Processing

12 May 2021

INSTITUTE FOR GEOPHYSICS

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Passion for Geoscience

Processing flow

1. Convert to CGG Internal Format
2. Nav merge / trace edit
3. Low Cut Filter
4. Time Variant Scaling (TVS) & Resample to 4ms
5. Swell Noise Attenuation (SNA)
6. Debubble
7. Linear Noise Attenuation (LNA)
8. Tidal Statics Correction
9. Water Column Statics Correction
10. Shot & Channel Scaling
11. Receiver Motion Correction (RMC)
12. Joint Deghost & Designature
13. Residual Bubble Removal
14. Source Sensor Datum Correction
15. Shallow Water Demultiple
16. Surface Related Multiple Elimination (3D SRME)
17. Simultaneous Subtraction of MWD & SRME
18. Residual Linear Noise Attenuation (residual LNA)
19. Trace Regularization & Interpolation
20. Velocity Analysis
21. Radon Demultiple
22. Footprint Removal
23. Diffracted Multiple Removal
24. Common Offset Denoise
25. Q Analysis and Compensation
26. Final TTI Kirchhoff Migration
27. Convert from Depth to Time Domain

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Outline

- **Objective:**

  To convert migrated volume from depth to time domain.

- **Procedure:**

  Smooth converting velocity by 1000m – subline direction, 500m – crossline direction, 40m – vertical, to avoid structure undulation. Water velocity is kept consistent.

- **Display:**

  Time Stack.

- **Observation & Recommendation:**

  Time stack converted with smoothed velocity presents more reasonable structure, it’s recommended to apply for depth-time conversion.

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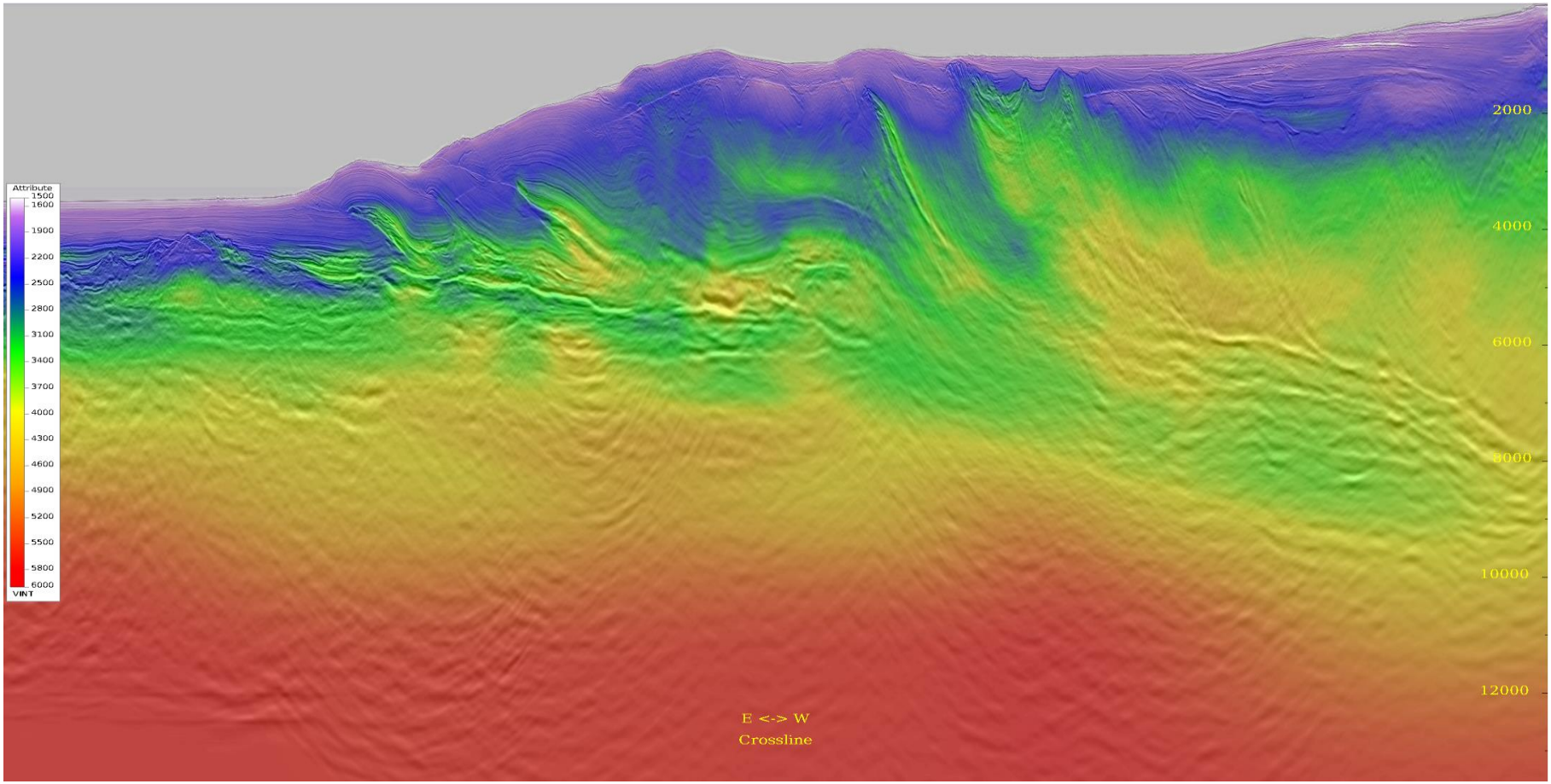
Original Velocity from VMB



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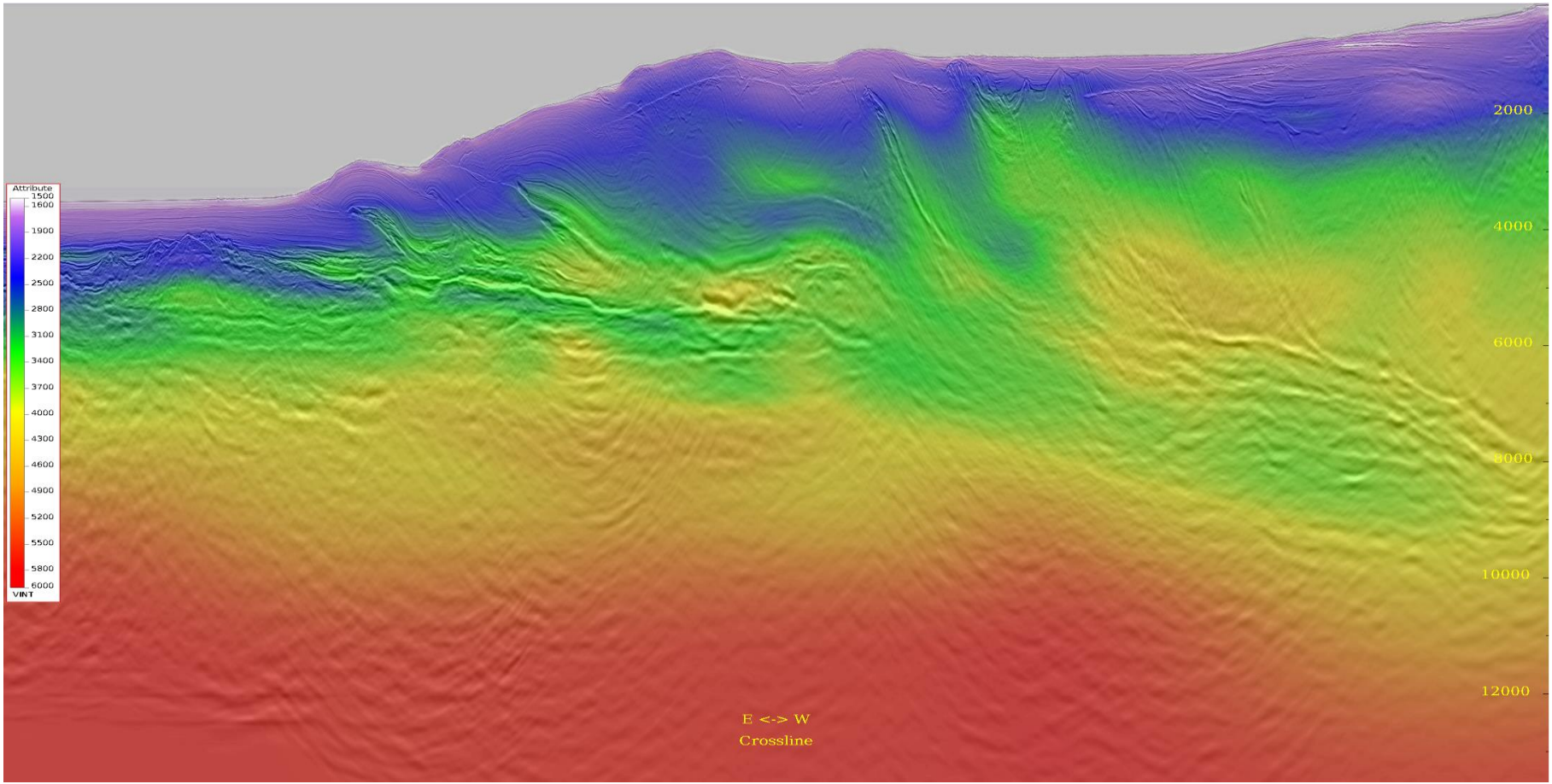
Smoothed Velocity for Depth Time Conversion



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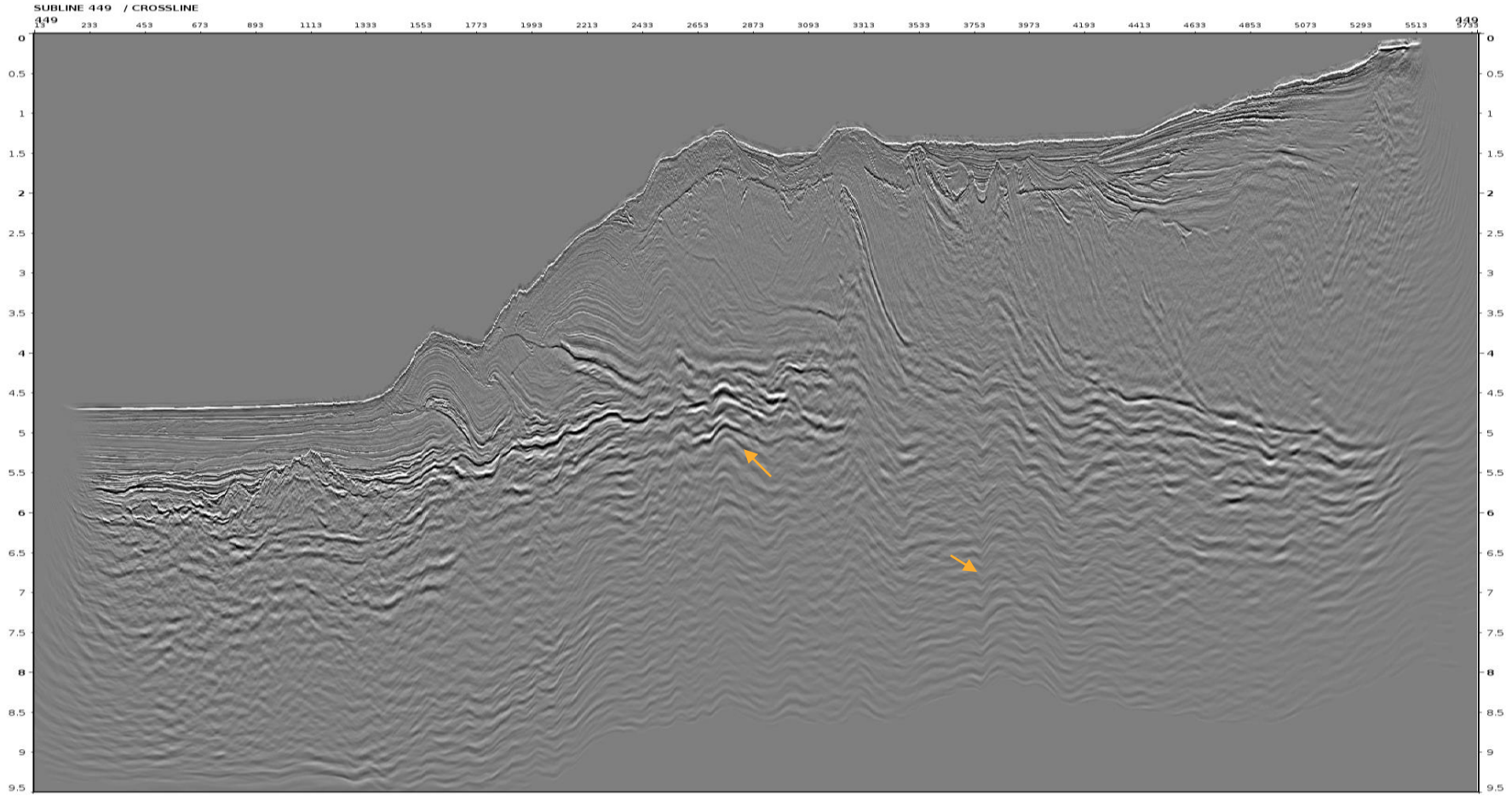
Time Stack Converted with Original Velocity



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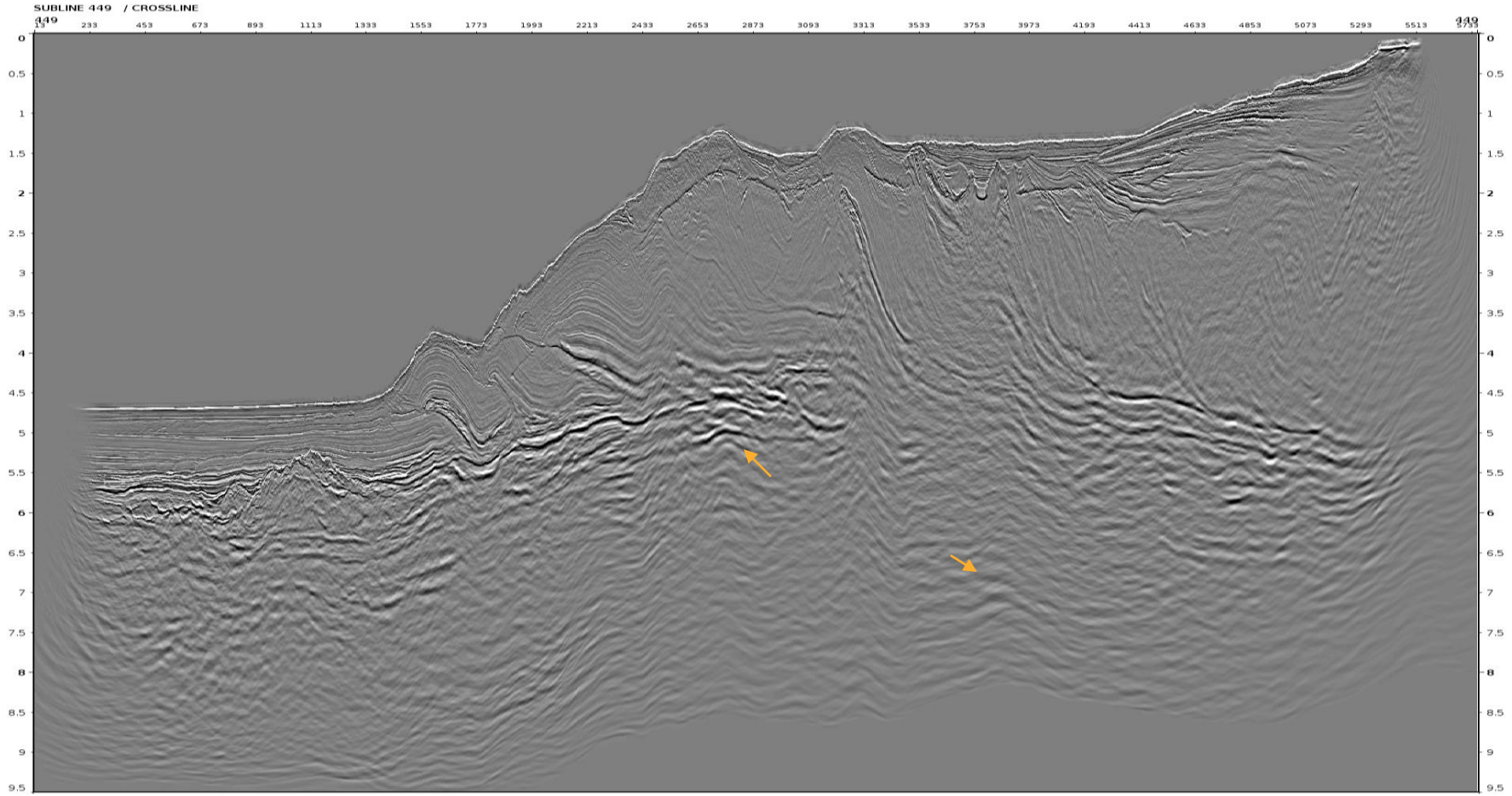
Time Stack Converted with Smoothed Velocity



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