

# Reflection seismic 1

**Educational Material** 

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# Stacking

- Statics
- Residual statics in combination with the velocity analysis
- Muting

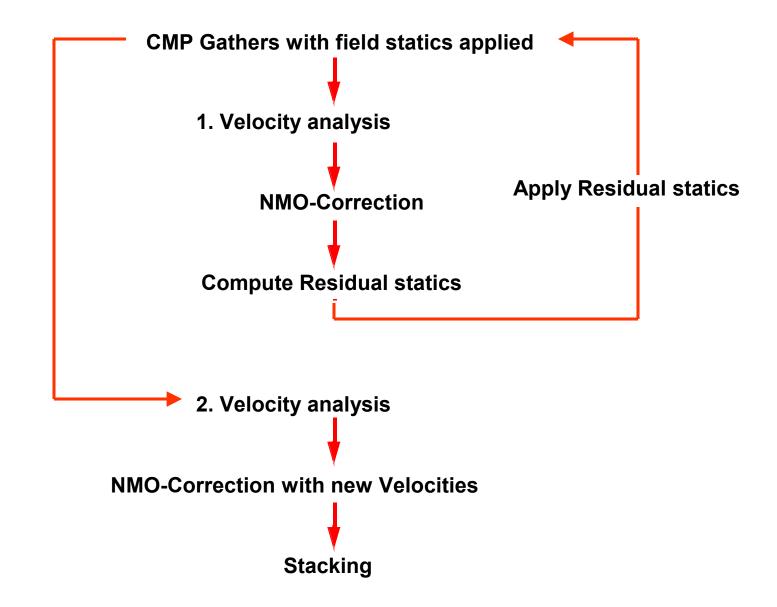
 $\Rightarrow$  Approximated zero offset section

### Statics

#### Correction for Topography "Uphole"-Statics using shots in Borehole Refraction-Statics

Methods to determine the corrections Delay-Time GRM ("generalised reciprocal method") DRM ("diminishing residual matrices")

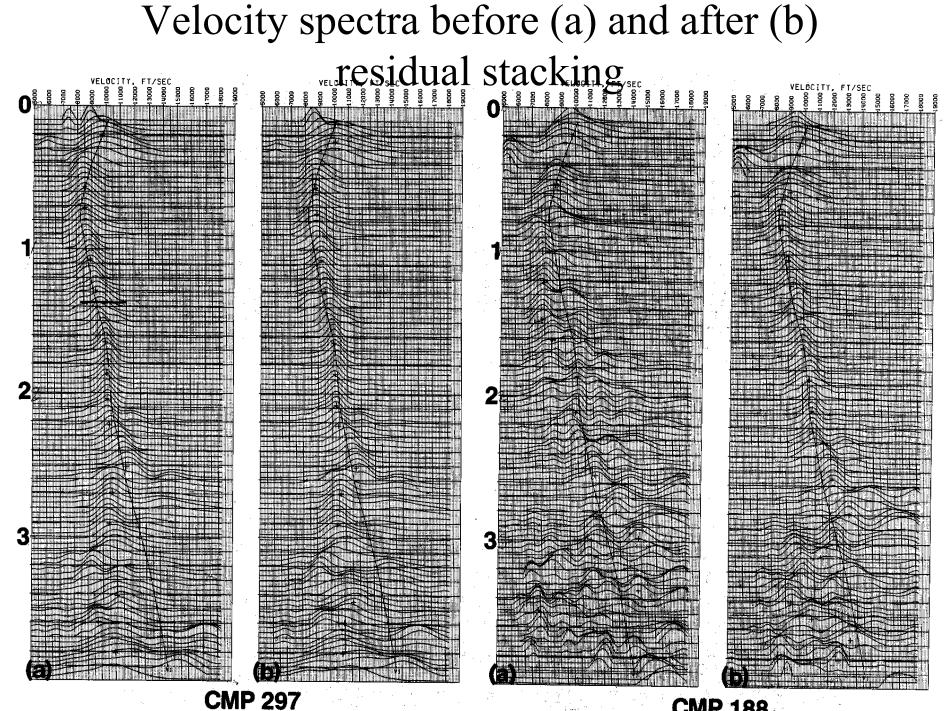
#### **Residual statics**



#### NMO corrected data before and after residual corrections

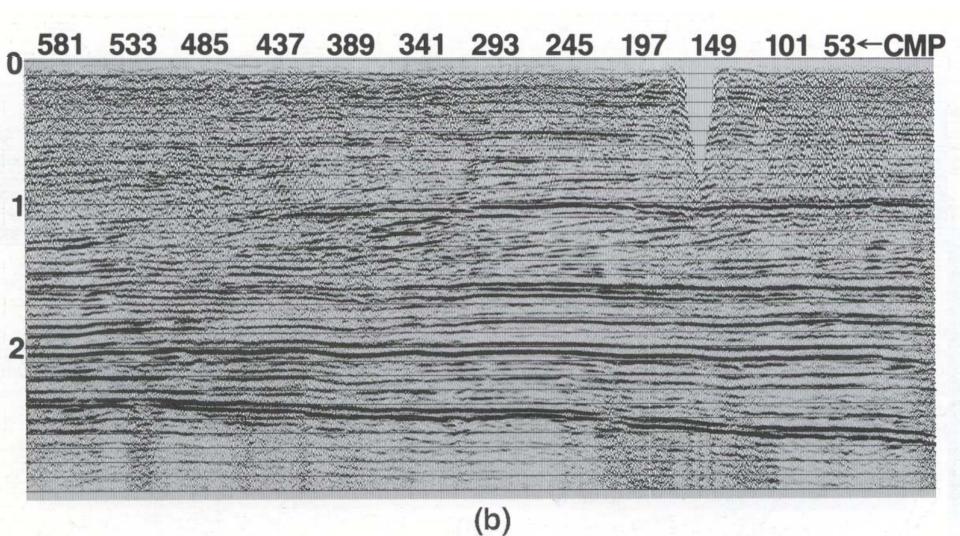
0	335	312	287	264	239	216	191 1	<b>68</b>	143	120	<u>95←CMP</u>
2											

(b)

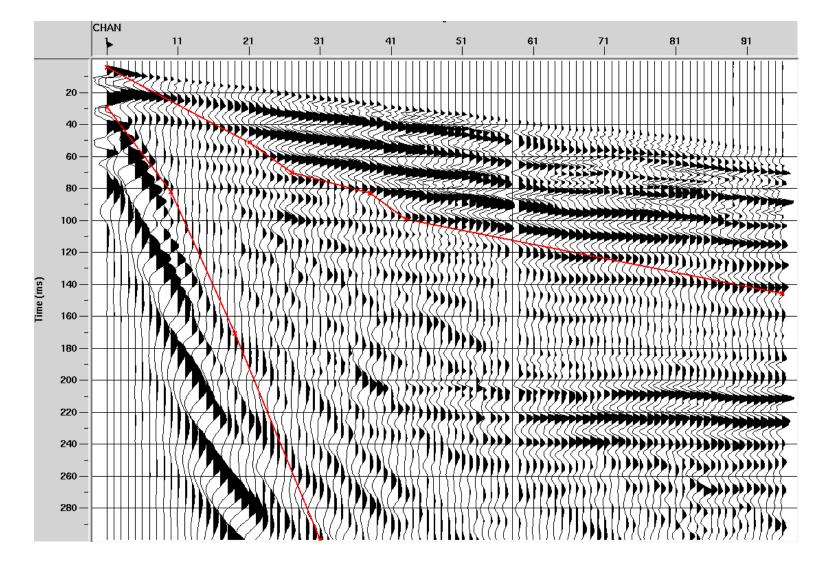


**CMP 188** 

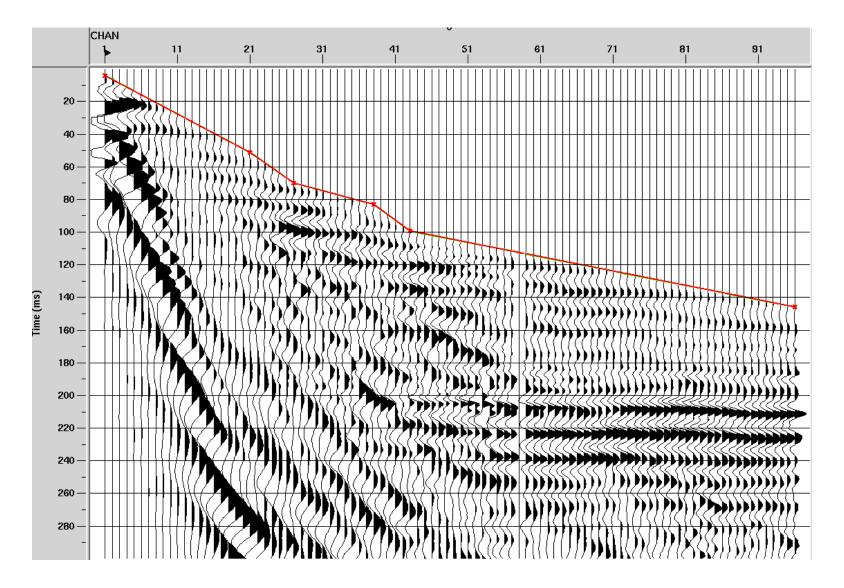
#### CMP stacks without and with residual stacking



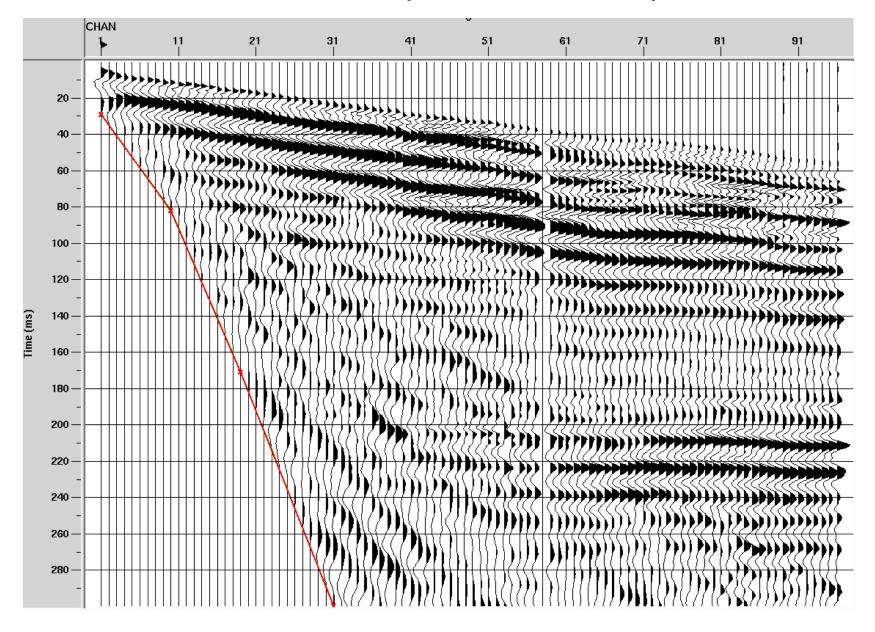
# Muting



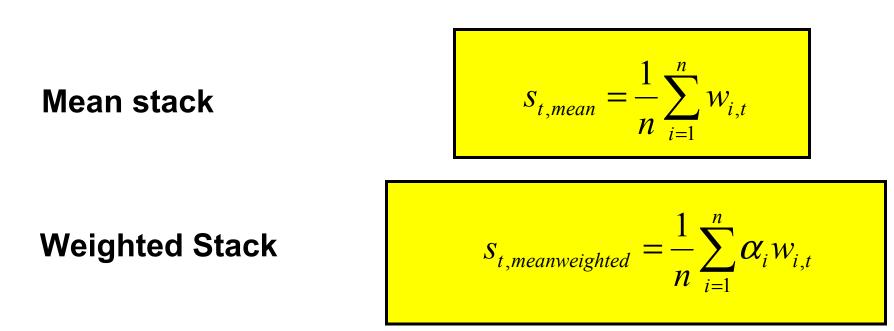
#### top mute (refractions)



#### **bottom mute (interface waves)**



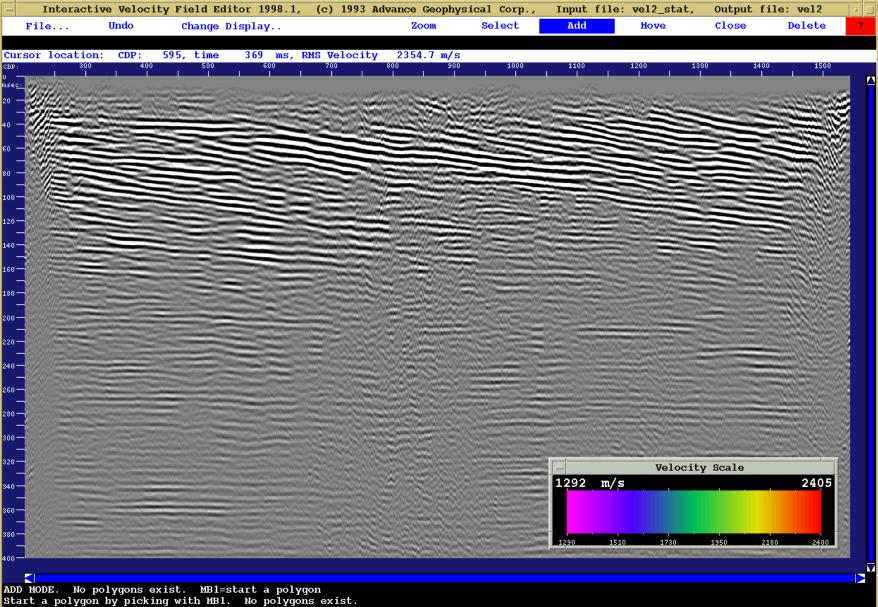
#### **Methods to Stack**



#### **Diversity Stack/Min-Max-exclude**

Certain traces are muted and not included in the stacking procedure

#### stacked section

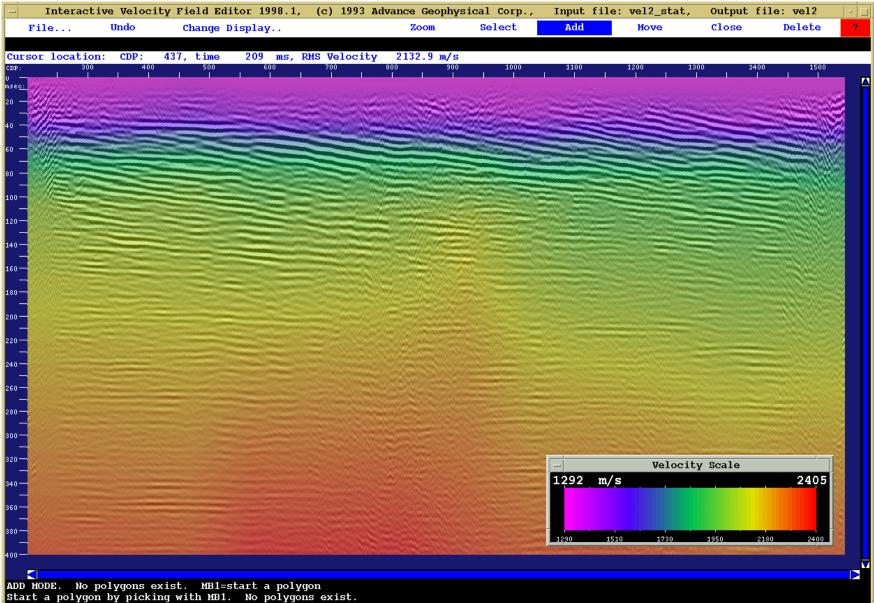


#### Velocity model

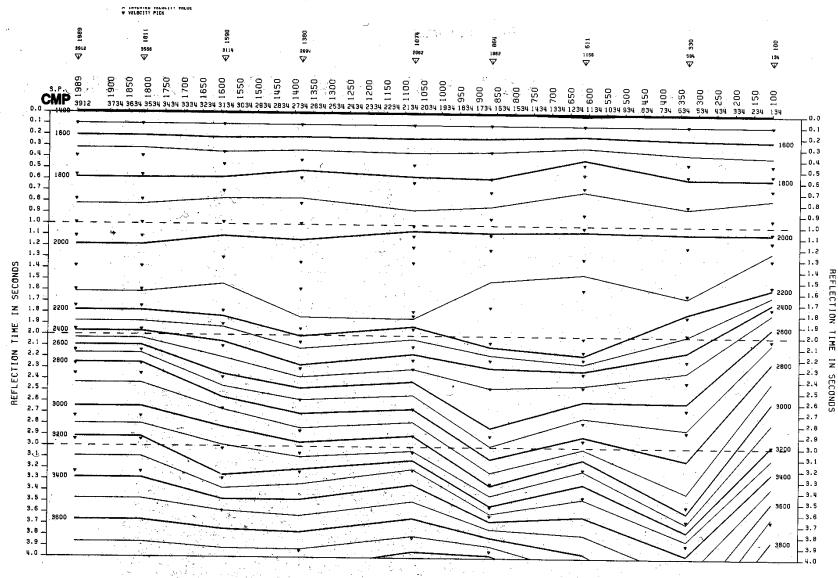
-	Interact	ive Veloci	ty Field Ed	itor 1998.1,	(c) 1993	Advance Geophys	ical Corp.,	Input file:	vel2_stat,	Output file	a: vel2	• 🗆
F	ile	Undo	Change I	Display		Zoom	Select	Add	Move	Close	Delete	?
Curso	or locatio		419, time 500	104 ms, k 600	MS Velocity 700	y 2023.4 m/s 800 900	1000	1100	1200 1300	1400	1500	
U mse <u>c:</u>										I		
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 40												
-												
60 — _												
80 —												
-												
120-												
140												
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180 -												
200 —												
220-												
240												
-												
260 -												
280 —												
240 — 260 — 280 — 300 — 300 —												
_												
320 — —								-	Velocity	Scale		
340 —								1292 m/s			2405	
								1290 1510	1730	1950 2180	2400	
400 —												V
		nolvgong ov	vict MR1-	start a polyg	ion							

Start a polygon by picking with MB1. No polygons exist.

## Velocity model

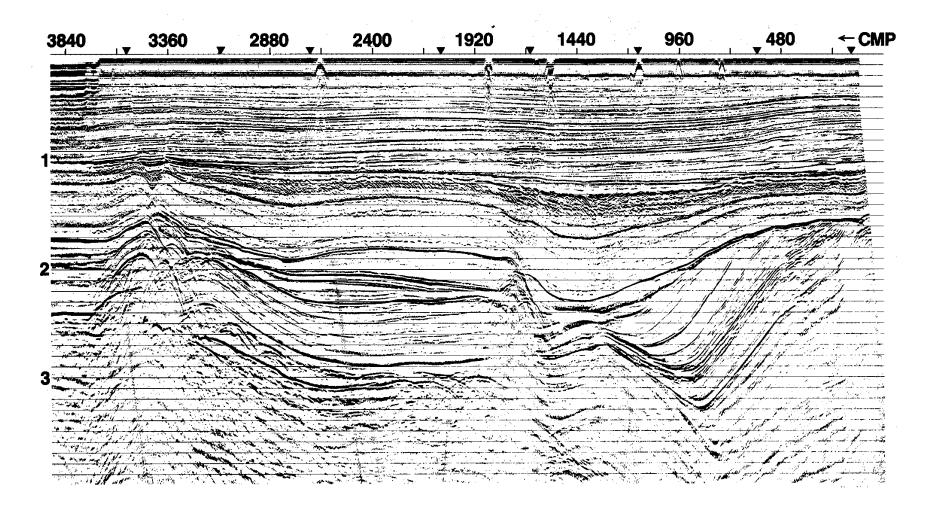


### Stacking velocity field



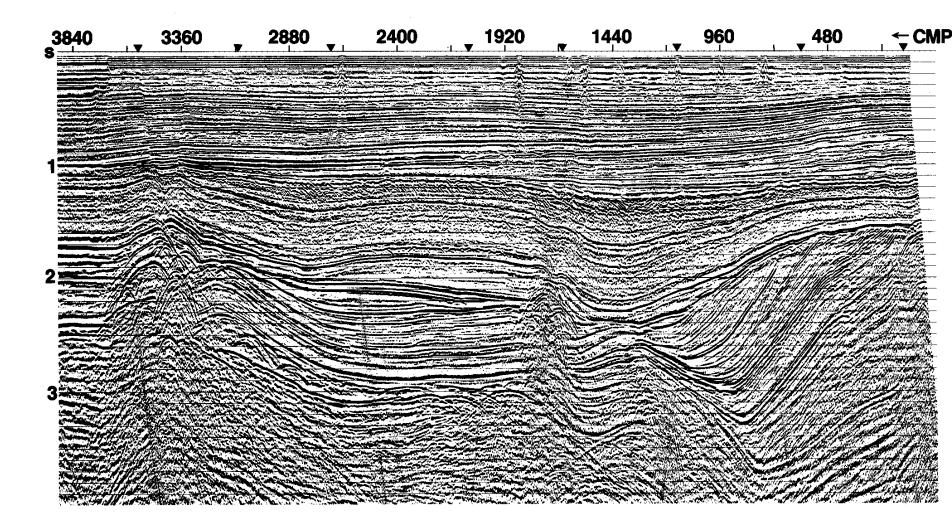
Yilmaz, 1987

### CMP stack



Yilmaz, 1987

## CMP stack using gain function



Yilmaz, 1987

### Migrated CMP stack

