Amoco 2.5D

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ABSTRACT

This is a 2D dip line from a 2.5D model calculated using the 3D acoustic wave equation. For more information about the model, see Etgen and Regone (1998). Also see the directory "SEG1998", which contains the above abstract and the talk slides that went with it.

This model was created by John Etgen and Carl Regone on the Amoco CM-5 in Tulsa. I got permission from Amoco just before the merger to publically release this data, which is a 2D dip line subset of the full synthetic 3D dataset. This dataset was meant to be a severe test of 2.5D Kirchhoff migration (the model is invariant in the Y direction). Carl Regone constructed the model and he is a big proponent of wavefield methods, so wanted something that would show up the limitations of Kirchhoff!

GEOMETRY OF DATA

Raw Data /data/2d_synthetic/amoco-2.5d/shots.HH
Velocity Model /data/2d_synthetic/amoco-2.5d/velmodel.HH,velsmooth.HH,velsmoother.HH
Usage Migration test: (Etgen and Regone, 1998)
Geometry

```
shots.HH:
        in="stdin"
        expands to in="stdin"
        esize=4
        n1=384  n2=256  n3=385  n4=1               37847040 elem          151388160 bytes
        d1=0.0099       d2=0.025        d3=0.05 d4=1
        o1=0    o2=0    o3=0    o4=0
        label1=t (s)
        label2=h (km)
        label3=x\r-40 \s60 s\s100 \r40  (km)
```

Problem Migration test
History of Data Gift from BP Amoco (2000)
Proprietary Considerations If you use this data be sure to thank BP Amoco and reference

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John and Carl's abstract. I'd appreciate it if you could reference my 2.5D migration paper too (in which this dataset is also used): Efficient two and one-half dimensional true-amplitude migration by Dellinger, Gray, Murphy, and Etgen (which hopefully should appear in GEOPHYSICS in the May/June 2000 issue). Sam Gray says of this model: This model is kind of bad because it seems to break everything, F-X, Kirchhoff, everything. I think Marmousi makes Carl's point much better than this model does.

Joe's reply to the question whether we can distribute this dataset to other people: "Any of those 2D datasets you got from me you can do whatever you want with. Just thank BP Amoco for making it available if you publish or present something with it." (Figure5 is Sam's attempt at making a good image using this data.)

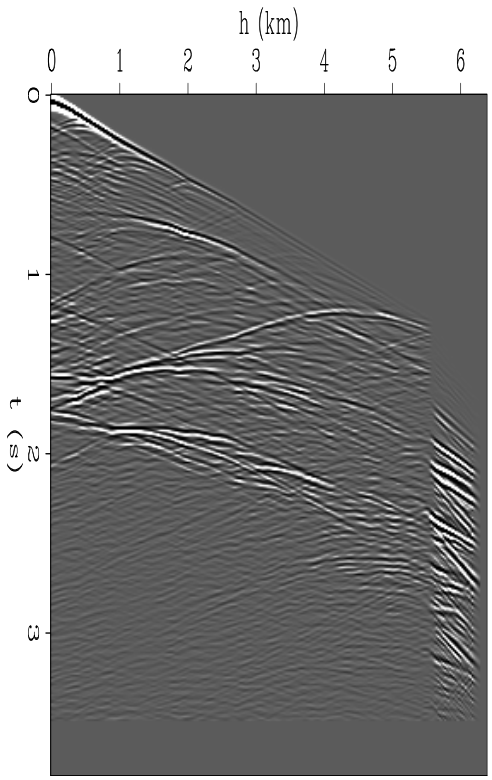

Figure 1: Raw Data amoco-2.5d-gather [ER]

REFERENCES

Etgen, J., and Regone, C., 1998, Strike shooting, dip shooting, widepatch shooting – Does prestack migration care? A model study.: 68th Annual Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 66–69.

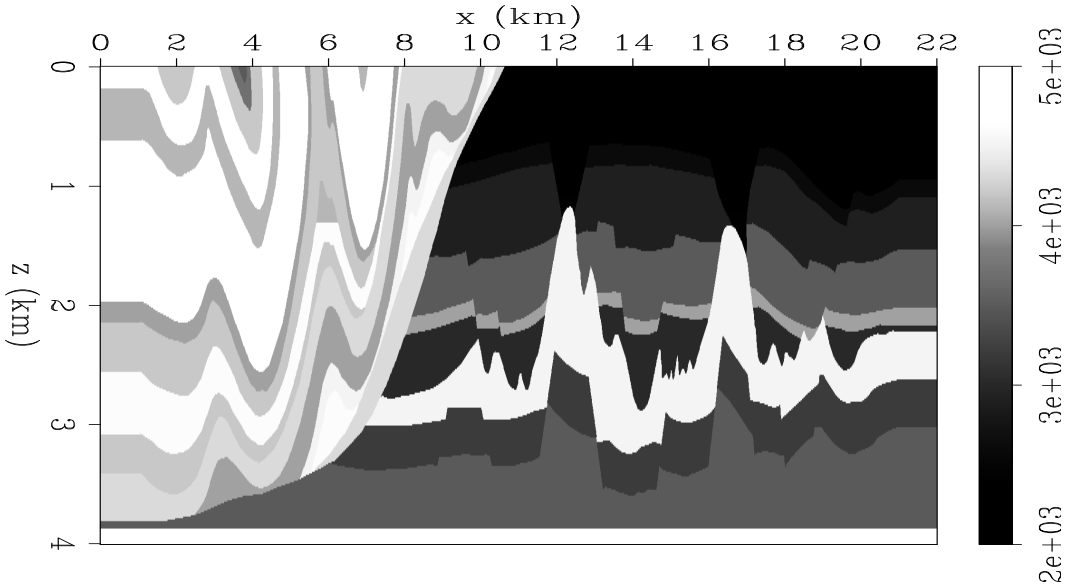

Figure 2: Velocity model amoco-2.5d-velmod [ER]

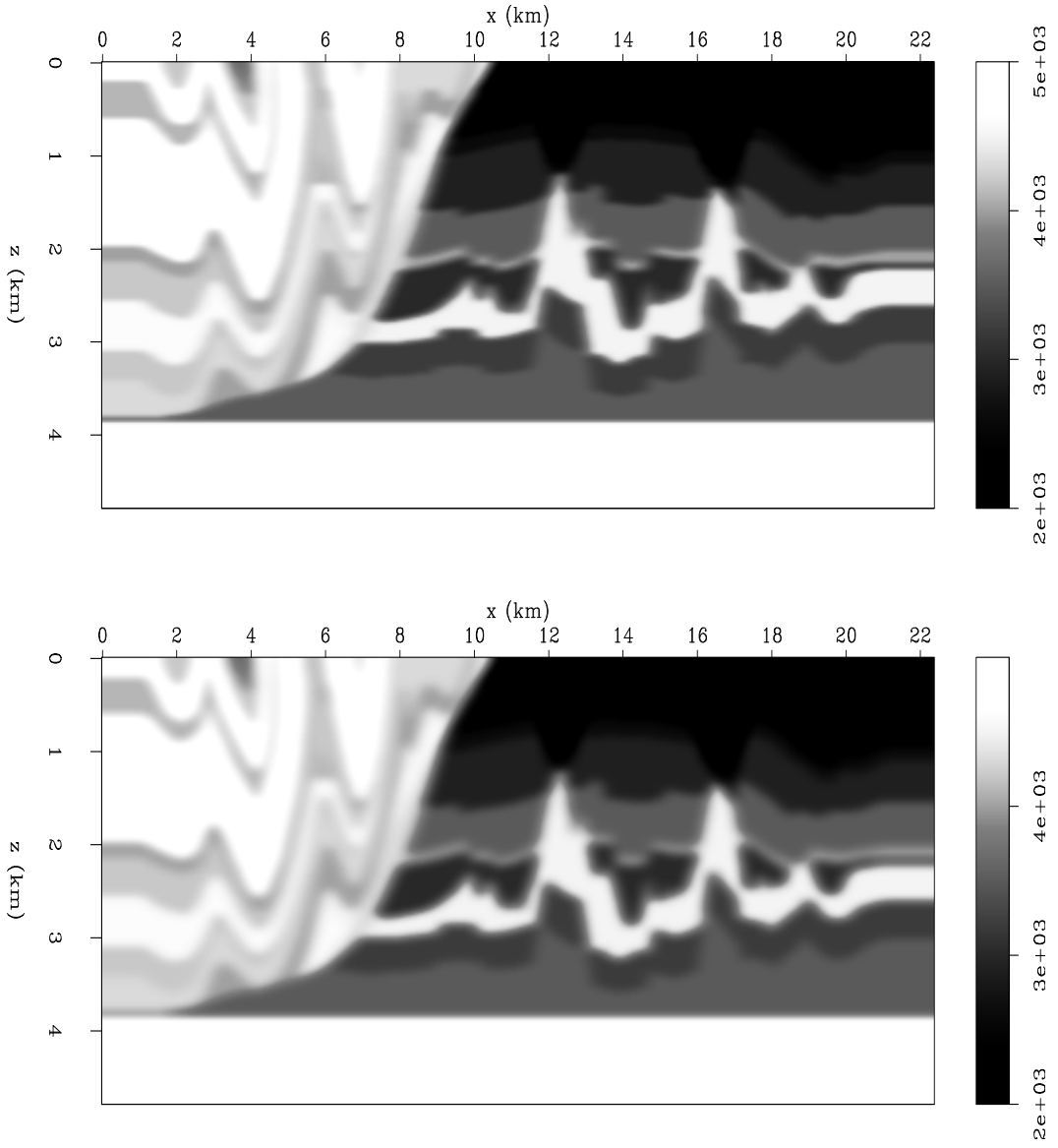

Figure 3: Two smoother versions of the velocity model amoco-2.5d-velsmooth [ER]

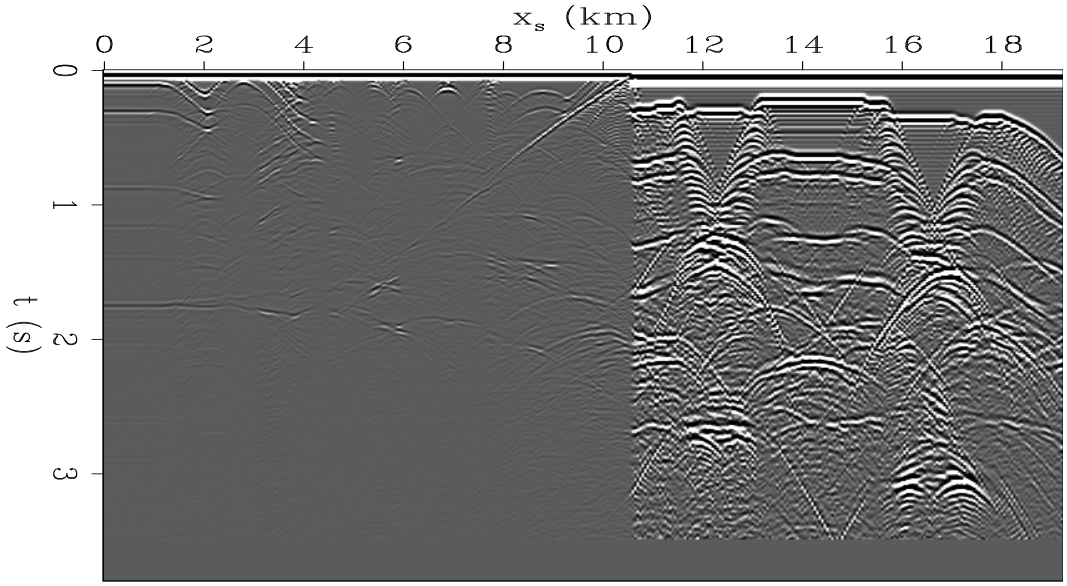

Figure 4: Zero offset image amoco-2.5d-zero [ER]

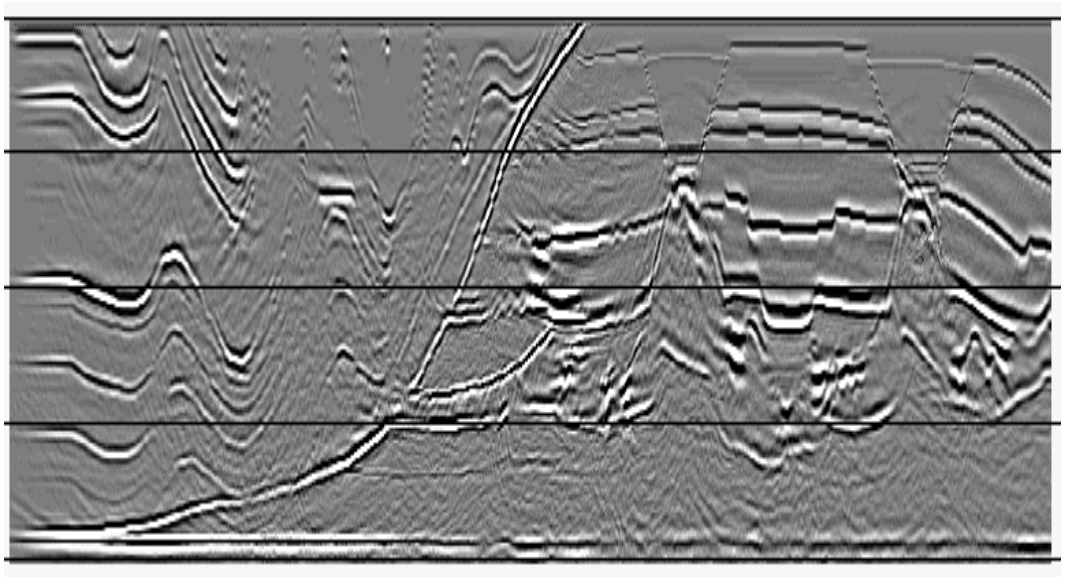

Figure 5: Migration amoco-2.5d-mig [NR]