

## Seismic Oceanography

### A New Tool to Characterize Physical Oceanographic Structures and Processes

Grant George Buffett

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# **Seismic Oceanography**

## **A New Tool to Characterize Physical Oceanographic Structures and Processes**

Memòria presentada per Grant George Buffett per optar al Títol de Doctor en Geologia

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# **APPENDIX II**

## **Processing Flows for Iberian Atlantic Margin Sections**



## LINE IAM-3

### SEG-Y data input

#### Geometry application

#### Linear Moveout Correction

#### Eigenvector Filter

*design gates: 0-500 ms*

*subtraction gates: 0-500/*

*horizontal window width 192 traces*

*start percent of eigenimage range 0.*

*end percent of eigenimage range 10.*

#### Linear Moveout Correction reversal

#### Ormsby Bandpass Filter

*phase: minimum*

*percent additive noise factor: 1.*

*apply a notch filter? No*

*filter frequency values 8/15-90/100 Hz*

#### True Amplitude Recovery

*basis for spherical spreading 1/dist (cylindrical)*

*velocity treated as space variable: No*

*dB/sec correction constant 6.*

#### Ensemble Gain

*gain computation algorithm Stack traces*

*average amplitude normalization level 1.*

*first window start time : 0 ms*

*maximum window start increment 40 ms.*

*last window end time: end of trace*

*maximum first window length 400 ms.*

*maximum last window length 400 ms.*

#### Normal Moveout Correction

*stretch mute percentage 0 %.*

*apply any remaining static during NMO?: No*

*apply partial NMO?: No*

*long offset correction: NONE*

#### Stacking

*sort order of input ensembles: CMP*

*method for trace summing Mean*

*root power scalar for stack normalization: 0.5*

*apply final datum statics after stack? No*

#### F-X Deconvolution

*type of filter: Wiener-Levinson*

*percentage of white noise 0.*

*horizontal window length 10*

*number of filter samples 9*

*time window length 1100.*

*time window overlap 110.*

*F-X filter start frequency 1.Hz*

*F-X filter end frequency 90.Hz*

**Phase Shift Migration**

*CMP range to migrate: all*

*CMP interval: 12.5 m*

*minimum frequency: 10 Hz*

*maximum frequency: 90 Hz*

*Percent velocity scale factor 100.*

**Automatic Gain Control (applied for display purposes only, not for amplitude analysis)**

*type of AGC scalar RMS*

*AGC operator length 6000.*

*basis for scalar application: leading trace*

*robust scaling? No*

**Time/Depth Conversion**

## LINE IAM-5

### SEG-Y data input

#### Geometry application

#### Linear Moveout Correction

#### Eigenvector Filter

*design gates: 0-550 ms*

*subtraction gates: 0-550/*

*horizontal window width 192 traces*

*start percent of eigenimage range 0.*

*end percent of eigenimage range 10.*

#### Linear Moveout Correction reversal

#### Ormsby Bandpass Filter

*phase: minimum*

*percent additive noise factor: 1.*

*apply a notch filter? No*

*filter frequency values 8/15-90/100 Hz*

#### True Amplitude Recovery

*basis for spherical spreading 1/dist (cylindrical)*

*velocity treated as space variable: No*

*dB/sec correction constant 6.*

#### Ensemble Gain

*gain computation algorithm Stack traces*

*average amplitude normalization level 1.*

*first window start time : 0 ms*

*maximum window start increment 40 ms.*

*last window end time: end of trace*

*maximum first window length 400 ms.*

*maximum last window length 400 ms.*

#### Normal Moveout Correction

*stretch mute percentage 0 %.*

*apply any remaining static during NMO?: No*

*apply partial NMO?: No*

*long offset correction: NONE*

#### Stacking

*sort order of input ensembles: CMP*

*method for trace summing Mean*

*root power scalar for stack normalization: 0.5*

*apply final datum statics after stack? No*

#### F-X Deconvolution

*type of filter: Wiener-Levinson*

*percentage of white noise 0.*

*horizontal window length 10*

*number of filter samples 9*

*time window length 1000.*

*time window overlap 100.*

*F-X filter start frequency 1.Hz*

*F-X filter end frequency 90 Hz*

**Phase Shift Migration**

*CMP range to migrate: all*

*CMP interval: 12.5 m*

*minimum frequency: 10 Hz*

*maximum frequency: 90 Hz*

*Percent velocity scale factor 100.*

**Automatic Gain Control (applied for display purposes only, not for amplitude analysis)**

*type of AGC scalar RMS*

*AGC operator length 6000.*

*basis for scalar application: leading trace*

*robust scaling? No*

**Time/Depth Conversion**



**LINE IAM-9****SEG-Y data input****Geometry application****Linear Moveout Correction****Eigenvector Filter***design gates: 0-550 ms**subtraction gates: 0-550/**horizontal window width 192 traces**start percent of eigenimage range 0.**end percent of eigenimage range 10.***Linear Moveout Correction reversal****Ormsby Bandpass Filter***phase: minimum**percent additive noise factor: 1.**apply a notch filter? No**filter frequency values 8/15-90/100 Hz***True Amplitude Recovery***basis for spherical spreading 1/dist (cylindrical)**velocity treated as space variable: No**dB/sec correction constant 6.***Ensemble Gain***gain computation algorithm Stack traces**average amplitude normalization level 1.**first window start time : 0 ms**maximum window start increment 40 ms.**last window end time: end of trace**maximum first window length 400 ms.**maximum last window length 400 ms.***Normal Moveout Correction***stretch mute percentage 0 %.**apply any remaining static during NMO?: No**apply partial NMO?: No**long offset correction: NONE***Stacking***sort order of input ensembles: CMP**method for trace summing Mean**root power scalar for stack normalization: 0.5**apply final datum statics after stack? No***F-X Deconvolution***type of filter: Wiener-Levinson**percentage of white noise 0.**horizontal window length 10**number of filter samples 9**time window length 1000.**time window overlap 100.**F-X filter start frequency 1.Hz*

*F-X filter end frequency 90 Hz*

**Phase Shift Migration**

*CMP range to migrate: all*

*CMP interval: 12.5 m*

*minimum frequency: 10 Hz*

*maximum frequency: 90 Hz*

*Percent velocity scale factor 100.*

**Automatic Gain Control (applied for display purposes only, not for amplitude analysis)**

*type of AGC scalar RMS*

*AGC operator length 6000.*

*basis for scalar application: leading trace*

*robust scaling? No*

**Time/Depth Conversion**

**LINE IAM-11****SEG-Y data input****Geometry application****Linear Moveout Correction****Eigenvector Filter***design gates: 0-500 ms**subtraction gates: 0-500/**horizontal window width 192 traces**start percent of eigenimage range 0.**end percent of eigenimage range 10.***Linear Moveout Correction reversal****Ormsby Bandpass Filter***phase: minimum**percent additive noise factor: 1.**apply a notch filter? No**filter frequency values 8/15-90/100 Hz***True Amplitude Recovery***basis for spherical spreading 1/dist (cylindrical)**velocity treated as space variable: No**dB/sec correction constant 6.***Ensemble Gain***gain computation algorithm Stack traces**average amplitude normalization level 1.**first window start time : 0 ms**maximum window start increment 40 ms.**last window end time: end of trace**maximum first window length 400 ms.**maximum last window length 400 ms.***Normal Moveout Correction***stretch mute percentage 0 %.**apply any remaining static during NMO?: No**apply partial NMO?: No**long offset correction: NONE***Stacking***sort order of input ensembles: CMP**method for trace summing Mean**root power scalar for stack normalization: 0.5**apply final datum statics after stack? No***F-X Deconvolution***type of filter: Wiener-Levinson**percentage of white noise 0.**horizontal window length 10**number of filter samples 9**time window length 1000.**time window overlap 100.**F-X filter start frequency 1.Hz*

*F-X filter end frequency 90 Hz*

**Phase Shift Migration**

*CMP range to migrate: all*

*CMP interval: 12.5 m*

*minimum frequency: 10 Hz*

*maximum frequency: 90 Hz*

*Percent velocity scale factor 100.*

**Automatic Gain Control (applied for display purposes only, not for amplitude analysis)**

*type of AGC scalar RMS*

*AGC operator length 6000.*

*basis for scalar application: leading trace*

*robust scaling? No*

**Time/Depth Conversion**