

```
For all frequencies {  
  For all non-linear iterations {  
    For all shots {  
      Forward model wavefield  
      Compute residuals  
      Back-propagate residuals  
      Compute single-shot gradient  
    }  
    Sum total gradient vector  
    Calculate conjugate gradient  
    For all shots {  
      Compute single-shot step-length  
    }  
    Sum total step-length  
    Update model  
  }  
}
```