ABSTRACT

The Aegean Sea and its surrounding area (Greece and western Turkey) comprise one of the most seismically active regions of the world. We used Cepstral stacking Method (CSM), developed by Dr. Shelton S. Alexander, to analyze and interpret the relationship between fault depth and magnitude. Our findings indicate that these two parameters are important for the focal mechanism of an earthquake. In this poster, we provide a series of printing. This PowerPoint 2007 template produces a 36"x72" professional poster. It will guide you through the poster design process and answer your poster production questions. We provide a series of printing.

CEPSTRA STACKING METHOD (CSM)

The observed earthquake signal is analyzed using Fourier Transform (Fourier frequencies). The CSM is an extension of the Fourier Transform that enables us to obtain the Cepstral Coefficients.

<table>
<thead>
<tr>
<th>a</th>
<th>f0</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>(f)</td>
</tr>
<tr>
<td>(b)</td>
<td>(c)</td>
</tr>
<tr>
<td>(d)</td>
<td>(e)</td>
</tr>
<tr>
<td>(f)</td>
<td>(g)</td>
</tr>
</tbody>
</table>

where 

\[ a = f_0 - f_a \]

\[ b = f_0 + f_a \]

\[ c = f_0 - 2f_a \]

\[ d = f_0 + 2f_a \]

\[ e = f_0 - 3f_a \]

\[ f = f_0 + 3f_a \]

Then

\[ C = \log_{10}(F(a+f_0) + \log_{10}(F(a-f_0)) + \log_{10}(F(b+f_0)) + \log_{10}(F(b-f_0)) + \log_{10}(F(c+f_0)) + \log_{10}(F(c-f_0)) + \log_{10}(F(d+f_0)) + \log_{10}(F(d-f_0)) + \log_{10}(F(e+f_0)) + \log_{10}(F(e-f_0)) + \log_{10}(F(f+f_0)) + \log_{10}(F(f-f_0)) \]

If the logarithm of the power spectrum is transformed instead of the power spectrum (the spectra the spectrum used for the experiment):

\[ C' = \log_{10}(F(a+f_0)) + \log_{10}(F(a-f_0)) + \log_{10}(F(b+f_0)) + \log_{10}(F(b-f_0)) + \log_{10}(F(c+f_0)) + \log_{10}(F(c-f_0)) + \log_{10}(F(d+f_0)) + \log_{10}(F(d-f_0)) + \log_{10}(F(e+f_0)) + \log_{10}(F(e-f_0)) + \log_{10}(F(f+f_0)) + \log_{10}(F(f-f_0)) \]

Then the focal depth can be found from the depth of the peaks at (a) and (b) or at (c) and (d).

Focal depth and source mechanism are important for the focal mechanism of an earthquake. Poster design process and answer your poster production questions.