**ONBOARD CALCULATIONS**

Reshape raw voltage signals  
Convert each 1D signal to a 2D array \((N_{blk}, N_{seg})\)

Discard non-profiling data  
Use \(W_{\text{min}}\) threshold \((\propto \min |\Delta V_P(t_i)|, \text{Eq. 14, Appendix B})\)

Record \(T\) and \(P\) voltage quantities for each block  
\([\langle V_{T1} \rangle, \langle V_{T2} \rangle, V_P(N_{seg})]\)

Despike shear voltages  
Apply 3\(\sigma\) threshold to \(V_{s1}\) and \(V_{s2}\) (Appendix E)

Calculate voltage spectra  
\(\Psi_{s1}(f), \Psi_{s2}(f), \Psi_{Tt1}(f), \text{and } \Psi_{Tt2}(f)\)

Fit shear spectra over two ranges  
\[
\frac{\sum f f^{1/3} \Psi_{s1}(f)\big/ \sum f f^{2/3}}{\sum f f^{1/3} \Psi_{s2}(f)\big/ \sum f f^{2/3}} \quad \text{over } f_{l} - f_{m} \quad \text{over } f_{m} - f_{h}
\]

Fit \(Tt\) spectra over two ranges  
\[
\frac{\sum f f^{1} \Psi_{Tt1}(f)\big/ \sum f f^{2}}{\sum f f^{1} \Psi_{Tt2}(f)\big/ \sum f f^{2}} \quad \text{over } f_{l} - f_{m} \quad \text{over } f_{m} - f_{h}
\]

**POST-PROCESSING**

Calibrate averaged voltages  
\(T_1\) and \(T_2\) (Eq. 6), \(P\) (Eq. 12), and \(W\) (Eq. 13)

Derive viscosity and thermal diffusivity  
Use measured \(T\) and \(P\) together with \(S\) from SOLO-II CTD

Calculate four ‘initial’ turbulent dissipation values  
For \(S_1\) and \(S_2\), get \(\varepsilon_{\text{init}}\) for \(f_{l} - f_{m}\) and \(f_{m} - f_{h}\) (Eq. 24)

Repeat step above for thermal dissipation  
For \(T_{T1}\) and \(T_{T2}\), get \(\chi_{\text{init}}\) for \(f_{l} - f_{m}\) and \(f_{m} - f_{h}\) (Eq. 34)

Calculate the correction factors  
\(F_{Na}\) (Eq. 21) and \(F_{Kr}\) (Eq. 31)

Correct initial estimates  
\(\varepsilon_{\text{init}} \rightarrow \varepsilon\) (Eq. 17) and \(\chi_{\text{init}} \rightarrow \chi\) (Eq. 30)

Combine \(f_{l} - f_{m}\) and \(f_{m} - f_{h}\) fit values  
\(\varepsilon\) (Eqs. 25 and 27) and \(\chi\) (Eq. 35)

Calculate goodness of fit of spectra  
\(\varepsilon\) fit score (Eq. 26) and \(\chi\) fit score (Eq. 36)