where a is a constant. Since a very small curvature has a pronounced effect on entrainment, a will be small. Approximating the curvature as circular over a small region and obtaining a radius of curvature $R = \frac{1}{K}$ from the initial profile it is estimated, $a \approx .03$.

The range of eddy sizes supporting the Reynolds stresses is the same as that containing the bulk of the kinetic energy of the turbulence. From the spectra it is obvious that the stable stratification reduces the transfer of energy to the large scale turbulence, as predicted by Phillips hypothesis by reducing the Reynolds stress. The small scale turbulence, i.e. the equilibrium and dissipation range is at a much higher frequency than the $N = \sqrt{\frac{g}{\rho} \frac{\partial \rho}{\partial z}}$ for the upper layer, which would be in the neighborhood of $.1 \text{ sec}^{-1}$. Near the interface, $N \approx 1$ and a corresponding reduction in turbulence in this range is observed just above the interface.

It would be useful to compare these turbulent energy spectra to the corresponding situation with no return flow. With return flow for the same surface shear there would be a larger horizontal velocity gradient in the vertical direction which would increase viscous dissipation. There must also be a level at which $\frac{\partial u}{\partial z} = 0$, which would inhibit the energy transfer by Reynolds stresses. Considering these two factors we would expect a lower level of turbulent energy near the interface when a return flow is present, and therefore a lower rate of entrainment.

Besides these two reasons for expecting slower entrainment with return flow, there are also surface and internal setups and the shear stresses required to maintain those setups. The viscous forces would contribute to the energy dissipation term. The internal setup represents a transfer of kinetic energy to potential energy within the system, but