anottrot@ucsd.edu
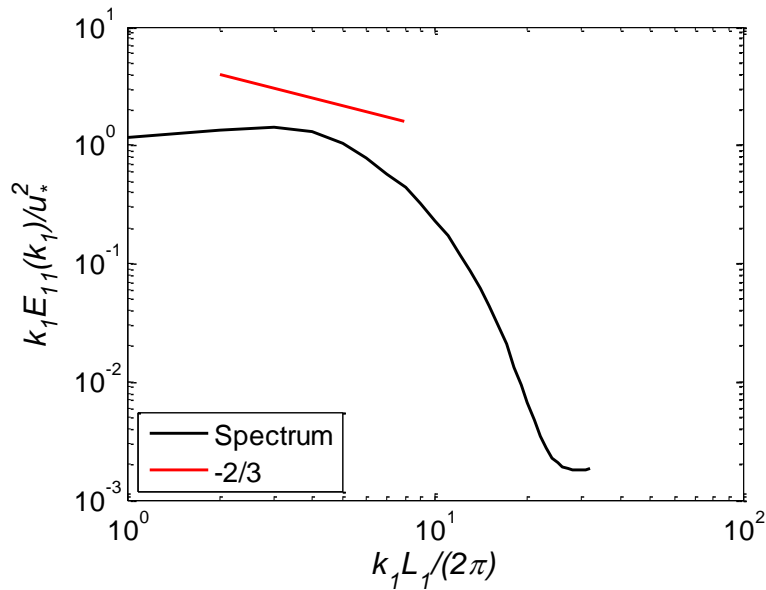
WRF-LES of the neutral ABL with 10 m/s background wind in the x_1 direction.
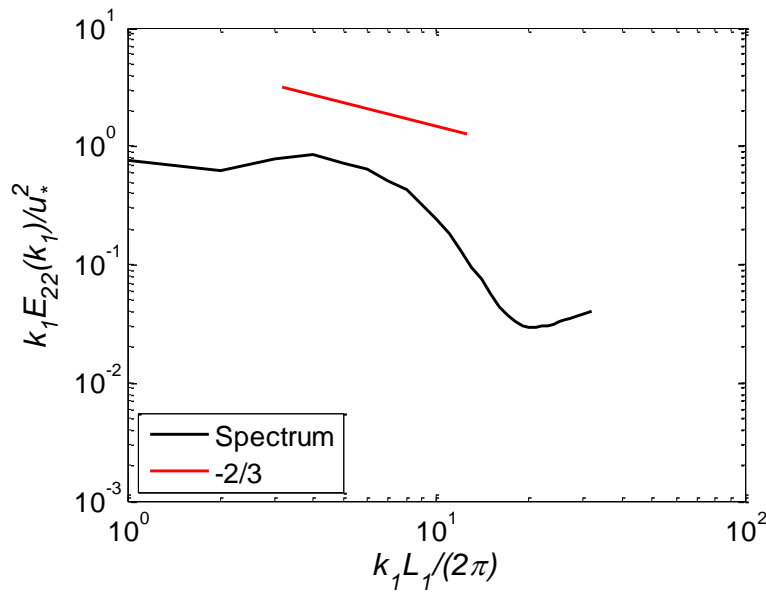
Sim params: L_x, L_y, L_z = 4096, 4096, 1024 m
dx, dy, dz = 64, 64, 8 m
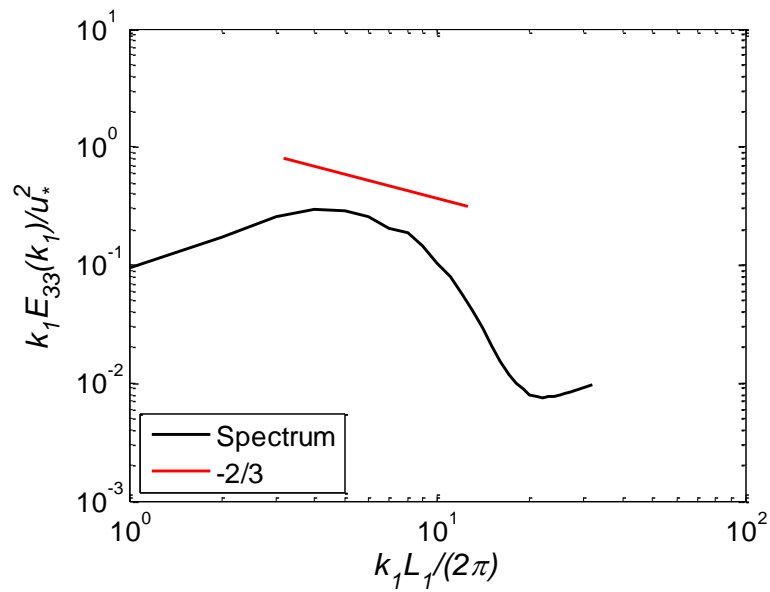Periodic lateral B.C.
SGS model is NBA-TKE (sfs-opt=2)

Spectra taken at z = 90.4 m (near top of surface layer) and there are 11 grid points between this height and the surface.

u velocity spectrum

v velocity spectrum

w velocity spectrum

NOTE: The simulation was spun up for 10 hours or about 15 eddy turn over times and all variance and momentum flux profiles are consistent with validation data. Averages are taken over 2 hours or about 3 eddy turnover times. This may be slightly short, but it is sufficient for testing purposes.