

Oxygen Burning Shell 512x128x128 – 14 elements network

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In [1]: run ransX.py
#-----#
('Datafile with space-time averages: ', 'D:\\ransX\\DATA_D\\Tseries\\tseries_oburn14_512x128x128_cosma_1400secs.npy')
('Central time (in s): ', 2221.2)
('Averaging windows (in s): ', 1400.0)
('Time range (in s from-to): ', 1500.0, 2940.0)
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Resolution: 512 128 128
Radial size of computational domain (in cm): 3.00e+08 1.00e+09
Radial size of convection zone (in cm): 4.20e+08 9.50e+08
Extent of convection zone (in Hp): 2.286610
Overshooting at inner/outer convection boundary (in Hp): 0.12 0.57
Averaging time window (in s): 1400.000000
RMS velocities in convection zone (in cm/s): 1.09e+07
Convective turnover timescale (in s) 9.74e+01
P_turb o P_gas 3.98e-04
Mach number Max 2.03e-02
Mach number Mean 1.63e-02
Dissipation length scale (in cm): 9.23e+08
Total nuclear luminosity (in erg/s): 2.73e+46
Rate of TKE dissipation (in erg/s): 3.00e+45
Dissipation timescale for TKE (in s): 42.358416
Dissipation timescale for TKE vertical (in s): 117.879839
Dissipation timescale for TKE horizontal (in s): nan
Reynolds number: 2438
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