

Abstract Submitted  
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**Turbulence power and kinetic energy spectra measured by a temporal-to-spatial record conversion** PREBEN BUCHHAVE, No Company Provided, CLARA VELTE, Technical University of Denmark — A method of converting a time record of turbulent velocity measured at a point in a flow to a spatial velocity record consisting of consecutive streak line elements that allows computation of turbulent kinetic wavenumber spectra is briefly introduced (more detail in a related paper at this conference, see ref). The method completely bypasses the problems with Taylor's hypothesis caused by fluctuating convection velocities. In the present contribution, we discuss the interpretation of the first order static moments (e.g. mean and rms velocity) and second order dynamic moments (e.g. spatial correlation function and energy spectrum) computed from the spatial record, which was derived from the measured temporal record. We compare several possible versions of the new energy spectra with the classical 1D and 3D energy spectra and the so-called total kinetic energy spectrum and discuss the range of validity of any equivalence between the new computations and the classical ones. Ref.: Clara M. Velte: A novel time-to-space conversion methods bypassing the problems with Taylor's hypothesis caused by fluctuating convection velocities

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