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Measuring spectra using burst-mode LDA CLARA VELTE, Technical University of Denmark, WILLIAM GEORGE, Chalmers University of Technology, MURAT TUTKUN, Norwegian Defense Research Establishment, BETTINA FROHNAPFEL, The University of Tokyo — The phrase "burst-mode LDA" refers to an LDA which operates with at most one particle present in the measuring volume at a time. For the signal to be interpreted correctly to avoid velocity bias, one must apply residence time-weighing to all statistical analysis. In addition, for time-series analysis, even though the randomly arriving particles eliminate aliasing, the self-noise from the random arrivals must be removed or it will dominate the spectra and correlations. A flaw in the earlier theory [1],[2], the goal of which was to provide an unbiased and unaliased spectral estimator from the random samples, is identified and corrected. The new methodology is illustrated using recent experiments in a round jet and a turbulent boundary layer.

1. Buchhave, P. **PhD Thesis**, SUNY/Buffalo, 1979.
2. George, W.K. **Proc. Marseille.-Balt. Dyn. Flow Conf. 1978**,757-800.

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