

Abstract Submitted
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Noise source characterization from far-field data in high-speed jets¹ JACQUES LEWALLE, KERWIN R. LOW, MARK N. GLAUSER, Syracuse University — We analyze pressure data from 3 microphones in the far-field coherent noise cone of a $Ma=0.6$ jet. 3500 individual sources are identified in the time-frequency domain, and some of their properties are extracted from the wavelet coefficients: magnitude, frequency, time of arrival. The sources' signature therefore includes the lags between the sound arrival times at the microphones. Based on a modeled mean jet velocity field, we calculate the refracted acoustic paths and propagation times from a grid of source locations to the microphones. The excellent agreement between measured and calculated lags provides a mapping between the measured lags and the approximate source locations. For our catalog of sources, we report on some statistics of source properties as a function of their location in the near-jet's shear layer and developing region beyond the end of the potential core. The ability to narrow the search (time and location) for sources in near-field data (LES or PIV) may be established on this basis.

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