

Abstract Submitted
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Coherence lengths of high-performance military aircraft noise radiation in the near field BLAINE HARKER, TRACIANNE NEILSEN, KENT GEE, Brigham Young Univ - Provo — Coherence analyses of pressure measurements on a ground-based array of microphones of noise from a tethered F-22A provide insights into the sound field variation with position and engine conditions which are fundamental in the continued development of more complete jet noise models. Among the features of jet noise illuminated by a coherence analysis are estimates of spatial coherence lengths as a function of frequency and location. The field coherence lengths are utilized in analyzing the coherence lengths of equivalent source distributions obtained from applying a specialized beamforming algorithm (DAMAS-C) to the ground-based array data. The cumulative results of these investigations provide a deeper understanding of jet noise source features and provide a full-scale military jet noise benchmark that should be considered when evaluating laboratory-scale jet studies and computational simulations of jet noise.

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