Abstract Submitted
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Phased-array measurements of military jet noise[1] BLAINE HARKER, KENT GEE, TRACIANNE NEILSEN, Brigham Young Univ - Provo, ALAN WALL, Air Force Research Laboratory - Wright Patterson Air Force Base, MICHAEL JAMES, Blue Ridge Research and Consulting LLC — Beamforming techniques for aeroacoustics applications have undergone significant advances over the past decade to account for difficulties that arise when traditional methods are applied to distributed sources such as those found in jet noise. Nevertheless, successful source reconstructions depend on array geometry and the assumed source model. A deconvolution approach for the mapping of acoustic sources (DAMAS) is utilized to remove array effects seen in conventional beamforming and allows for improved interpretation of results. However, the distributed nature of the jet noise source, as well as large correlation lengths at low frequencies, can result in inaccurate source locations and/or amplitudes for both conventional beamforming and DAMAS. Results using DAMAS-C, an extension of DAMAS, indicate the degree of source correlation for distributed sources. The application of phased-array algorithms to ground array measurements of a full-scale tactical jet engine at military and afterburner engine conditions confirm the greater source correlation at low frequencies. These preliminary results represent the first implementation of DAMAS-C on full-scale jet noise data.

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