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Near-field acoustical holography of military jet aircraft noise[1]
ALAN T. WALL, KENT L. GEE, TRACIANNE NEILSEN, DAVID W. KRUEGER, SCOTT D. SOMMERFELDT, Brigham Young University, MICHAEL M. JAMES, Blue Ridge Research and Consulting — Noise radiated from high-performance military jet aircraft poses a hearing-loss risk to personnel. Accurate characterization of jet noise can assist in noise prediction and noise reduction techniques. In this work, sound pressure measurements were made in the near field of an F-22 Raptor. With more than 6000 measurement points, this is the most extensive near-field measurement of a high-performance jet to date. A technique called near-field acoustical holography has been used to propagate the complex pressure from a two- dimensional plane to a three-dimensional region in the jet vicinity. Results will be shown and what they reveal about jet noise characteristics will be discussed.

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