

Abstract Submitted
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Numerical Simulations of Noise Generated by Supersonic Rectangular Jets Part 2: Frequency Band Analysis of Far-field Noise¹ RYAN JOHNSON, KAMAL VISWANATH, KAZHIKATHRA KAILASANATH, Naval Research Laboratory — A method has been developed to analyze the asymmetry of far-field noise generated by rectangular jets by examining the contributions arising from different frequency bands. This method was used to analyze simulations of a supersonic jet issuing from a rectangular nozzle with aspect ratio of 2.0 at four frequency ranges for several over-expanded, cold jet scenarios. Results show that low frequency phenomenon, such as shear layer noise, contribute the most to the asymmetry of rectangular jet noise for these conditions. This method is being extended to examine the differences in asymmetry in comparable circular jets, as well as heated rectangular jets.

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Kazhikathra Kailasanath
Naval Research Laboratory

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