

Auralization of Noise of Future Air Vehicles

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Auralization offers the means of systematically assessing the impact of noise of future air vehicles, including the effects of configuration, noise reduction technologies, and operations. It can be used as a means of communicating noise impact to stakeholders, it provides feedback to the noise analyst regarding the system under design, and it serves as an integral element of perception-influenced design. This talk first discusses the building blocks for auralization including source noise synthesis, propagation and sound reproduction. Next, a new auralization framework with linkages to system noise prediction is introduced. Finally, auralizations of future air vehicles including urban air mobility (air taxi) concepts, next generation commercial transports, and small unmanned aerial systems are discussed.



Dr. Rizzi joined NASA in 1989. He is the driving force behind the Perception-Influenced Design effort to develop revolutionary tools and methods for low noise design of transformative air vehicles. He and his team support several NASA and industry projects, including the NASA Revolutionary Vertical Lift Technology, Convergent Aeronautics Solutions, Transformational Tools and Technologies, and Environmentally Responsible Aviation projects. He is recipient of the 2015 NASA Exceptional Service Medal for "sustained and exceptional contributions to the acoustics discipline." He is an Associate Fellow of the AIAA and currently serves as Vice-Chair of the AIAA Aeroacoustics Technical Committee. He received his BS in Aerospace Engineering from the State University of New York at Buffalo, and his MS and Ph.D. in Aeronautics and Astronautics from Purdue University.