



Innovative Liner Concepts: Experiments and Impedance Modeling of Liners Including the Effect of Bias Flow

By National Aeronautics and Space Administration (NASA)

Biblioscholar Mrz 2013, 2013. Taschenbuch. Book Condition: Neu. 246x189x13 mm. This item is printed on demand - Print on Demand Neuware - The study of normal impedance of perforated plate acoustic liners including the effect of bias flow was studied. Two impedance models were developed by modeling the internal flows of perforate orifices as infinite tubes with the inclusion of end corrections to handle finite length effects. These models assumed incompressible and compressible flows, respectively, between the far field and the perforate orifice. The incompressible model was used to predict impedance results for perforated plates with percent open areas ranging from 5% to 15%. The predicted resistance results showed better agreement with experiments for the higher percent open area samples. The agreement also tended to deteriorate as bias flow was increased. For perforated plates with percent open areas ranging from 1% to 5%, the compressible model was used to predict impedance results. The model predictions were closer to the experimental resistance results for the 2% to 3% open area samples. The predictions tended to deteriorate as bias flow was increased. The reactance results were well predicted by the models for the higher percent open area, but deteriorated as the percent...

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