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Receptivity of a supersonic inviscid flow to periodic-in-time perturbations emanating from a wall CARLOS CHIQUETE, ANATOLI TUMIN, The University of Arizona — The receptivity of an inviscid supersonic flow past a flat plate to localized periodic-in-time perturbations emanating from the wall is revisited. The Euler equations are solved numerically with the help of a solver utilizing the CE/SE method. The computational results are projected onto the normal modes of the continuous spectra (fast and slow acoustic modes) with the help of the biorthogonal eigenfunction system formulated for the linearized Euler equations. The example illustrates how the biorthogonal eigenfunction system can be used to gain a physical insight into computational results. The considered problem also has an analytical solution written as an expansion into the normal modes. Comparison of theoretical and numerical results can serve for validating the numerical method.

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