for V/STOL testing indicates[2] that by using a streamwise distributed porosity in a slotted tunnel it becomes possible to eliminate pitching moment interference simultaneously with lift interference. The motivation of the research is to search for an optimum porosity distribution for minimizing both pitching moment and lift interferences, and to assess wind-tunnel interference for a given wall porosity distribution.

The zero streamline curvature $(d/dx)\,\delta(x)|_{x=0} = 0$ is suggested by Mokry as the criterion to choose the optimum porosity. This criterion certainly gives a small variation in δ near $x = 0$, but the magnitude of δ is large. By using a streamwise distributed porosity such as the gaussian distribution given in the Note,[1] not only the zero streamline curvature condition is satisfied in the interval $-0.5 < x < 1.5$, but also the magnitude of δ is reduced to half of those obtained from uniformly distributed porosity at $\beta/R_0 = 0.782$.

Furthermore, the gaussian distribution is chosen in the study for its mathematical simplicity, and has already indicated a large reduction in the lift interference. It is not our intention to say that the gaussian distribution is the final optimum distribution. As a continuing effort, a numerical method[3] has been developed to optimize the porosity distribution. The preliminary result has shown that the streamwise porosity distribution does reduce pitching moment interference simultaneously with lift interference. The computation would certainly be useful in the development of a new generation wind-tunnel wall.

References

[1] Lo, C. F., "Wind-Tunnel Wall Interference Reduction by Streamwise Porosity Distribution," *AIAA Journal*, Vol. 10, No. 4, April 1972, pp. 547–550.

[2] Binion, T. W., Jr., "An Investigation of Several Slotted Wind Tunnel Wall Configurations with a High Disc Loading V/STOL Model," AEDC-TR-71-77, May 1971, Arnold Engineering Development Center, Arnold Air Force Station, Tenn.

[3] Glassman, H. N. "A Modification to the Method of Block Cyclic Reduction for Computing the Lift Interference in a Wind Tunnel with Perforated Walls," M.S. thesis, 1972, University of Tennessee, Knoxville, Tenn.

Errata

Errata: "Atmospheric Transport, Dispersion and Chemical Reactions in Air Pollution: A Review"

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[AIAA J. **10**, 377–387 (1972)]

THE following corrections should be made to the above article: Equation (13) should read

$$\bar{c}_i(x, y, z) = \frac{Q_i/\rho}{2\pi\sigma_y\sigma_z\bar{u}} \exp\left[-\frac{x}{\bar{u}\tau_c}\right] \exp\left[-\frac{1}{2}\left(\frac{y}{\sigma_y}\right)^2\right] \times \left\{\exp\left[-\frac{1}{2}\left(\frac{z-h}{\sigma_z}\right)^2\right] + \exp\left[-\frac{1}{2}\left(\frac{z+h}{\sigma_z}\right)^2\right]\right\}$$

Equation (16) should read

$$\frac{d\bar{c}_{ik}}{dt} = -\frac{\bar{c}_{ik}}{\vartheta_k}\frac{d\vartheta_k}{dt} + \frac{1}{\vartheta_k}\sum_{j=0}^{L} q_{jk}\,\bar{c}_{ij} - \frac{\bar{c}_{ik}}{\vartheta_k}\sum_{j=0}^{L} q_{jk} + \frac{Q_{ik}}{\rho\vartheta_k} + \dot{c}_{ik}(\bar{c}_1, \ldots, \bar{c}_N, t)$$

The author regrets that these typographical errors were overlooked during proofreading.

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Index categories: Atmospheric, Space and Oceanographic Sciences; Boundary Layers and Convective Heat Transfer—Turbulent; Thermochemistry and Chemical Kinetics.

Errata: "Failure of Existing Theories to Correlate Experimental Nonacoustic Combustion Instability Data"

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[AIAA J, **8**, 626–631 (1970)]

THE equations on p. 630 should read

$$f = 1/\tau' = \bar{r}/[\delta + (2/3)^{1/2}D] = \bar{r}/D[\delta/D + (2/3)^{1/2}]$$

so that

$$\delta/D = \{\pi/6[1 + (\rho_{ox}/\rho_f)((1 - x)/x)]\}^{1/3} - (2/3)^{1/2}$$

for uniform-sized spherical oxidizer crystals.

$$K = \frac{1}{(\pi/6\{1 + (\rho_{ox}/\rho_f)[(1 - x)/x]\})^{1/3}}$$

where $x = \%$ oxidizer.

A similar expression can be derived for bimodal propellants

$$K_1 = \left\{\frac{x_1}{\pi/6[x_T + (\rho_{ox}/\rho_f)(1 - x_T)]}\right\}^{1/3}$$

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Index category: Combustion Stability, Ignition, and Detonation.

Announcement: 1972 Author and Subject Indexes

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