library search of ARS and AIAA publications since that time has indicated that no previous correction has been published.

In Ref. 1, J. J. Coleman developed the equations which must be satisfied for a vehicle with a fixed payload to achieve either a minimum liftoff weight at a fixed performance or maximum performance at fixed launch weight. In Ref. 2, J. N. Srivastava developed the equations for maximum payload with fixed launch weight and fixed performance. Because the resulting equations did not look the same in the two papers, Srivastava claimed that maximum performance results in a different set of optimal stage weights than the set for maximum payload.

The purpose of this Comment is to show that the results of Coleman and Srivastava are in fact identical and that there is no difference between the stated problems. The notations and assumptions are the same as in Ref. 1.

Equation (21) of Ref. 1 is

$$\frac{I_1(1-n_1c_1w_1^{n_1-1})}{(1-c_1w_1^{n_1-1})}\left[1-c_1w_1^{n_1-1}\left(\frac{w_1+w_2+w_3+w_L}{c_1w_1^{n_1}+w_2+w_3+w_L}\right)\right]= I_2\left[1-n_2c_2w_2^{n_2-1}\left(\frac{w_2+w_3+w_L}{c_2w_2^{n_2}+w_3+w_L}\right)\right] \quad (1)$$

which can be written, using Eq. (11) of Ref. 1,

$$\frac{I_1(1-n_1c_1w_1^{n_1-1})}{(1-c_1w_1^{n_1-1})}\left[1-c_1w_1^{n_1-1}\left(\frac{w_{o_1}}{w_{o_1}-w_1+c_1w_1^{n_1}}\right)\right]= I_2\left[1-n_2c_2w_2^{n_2-1}\left(\frac{w_{o_1}-w_1}{w_{o_1}-w_1+c_2w_2^{n_2}-w_2}\right)\right] \quad (2)$$

Writing the bracketed terms with common denominators and grouping w_{o_1} terms on the left-hand side gives

$$\frac{I_1(1-n_1c_1w_1^{n_1-1})}{(1-c_1w_1^{n_1-1})}\left[\frac{w_{o_1}(1-c_1w_1^{n_1-1})-(w_1-c_1w_1^{n_1})}{w_{o_1}-w_1+c_1w_1^{n_1}}\right]= I_2\left[\frac{(w_{o_1}-w_1)+(c_2w_2^{n_2}-w_2)-n_2c_2w_2^{n_2-1}(w_{o_1}-w_1)}{w_{o_1}-w_1+c_2w_2^{n_2}-w_2}\right] \quad (3)$$

The numerator of the left-hand side can be factored into $(w_{o_1}-w_1)\cdot(1-c_1w_1^{n_1-1})$, so dividing both sides by $(w_{o_1}-w_1)$ gives

$$\frac{I_1(1-c_1n_1w_1^{n_1-1})}{(w_{o_1}+c_1w_1^{n_1}-w_1)}=I_2\left[\frac{(1-c_2n_2w_2^{n_2-1})}{(w_{o_1}-w_1+c_2w_2^{n_2}-w_2)}-\frac{(w_2-c_2w_2^{n_2})}{(w_{o_1}-w_1)(w_{o_1}-w_1+c_2w_2^{n_2}-w_2)}\right] \quad (4)$$

which is identical to Eq. (12) of Ref. 2. A similar analysis holds for Eq. (22) of Ref. 1 and Eq. (13) of Ref. 2. Reversing the optimization index and the constraint function is therefore permitted in this problem, as Coleman stated.

References

[1] Coleman, J. J., "Optimum Stage Weight Distribution of Multistage Rockets," *ARS Journal*, Vol. 31, Feb. 1961, p. 259.

[2] Srivastava, J. N., "Optimum Stage Weight Distribution of Multistage Rockets," *ARS Journal*, Vol. 32, Feb. 1962, p. 296.

Errata

Errata: "Numerical Method for Hypersonic Internal Flow over Blunt Leading Edges and Two Blunt Bodies"

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EQUATION (15a) should read

$$U = U_n\{[2\gamma+(\gamma-1)U_n^2]/[(\gamma+1)U_n^2]\}-W\cos\phi$$

On page 621, line 28 should read:

a time step size ΔT is chosen such that

$$\Delta T = \text{minimum}\,|\Delta\lambda/[1.5a(M+1)]|$$

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Index category: Supersonic and Hypersonic Flow.

Erratum: "The Effect of Angle of Attack on Boundary-Layer Transition on Cones"

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[AIAA J. 10, 1127–1128 (1972)]

THE following figure replaces Fig. 2 of the subject Note.

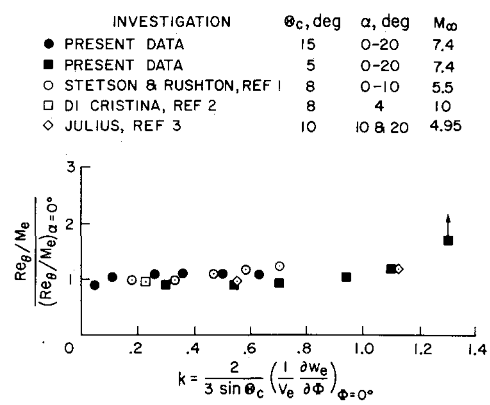

Fig. 2 Correlation of the beginning of transition on the windward ray of cones.

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Index category: Boundary-Layer Stability and Transition.