AIAA Journal
Article Update 24 Sep. 2018

Correction: Modal Analysis of Fluid Flows: An Overview

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DOI: 10.2514/1.J056060.c1

Correction Notice

This correction pertains to two errors in the original article when it was first published online [https://arc.aiaa.org/doi/pdf/10.2514/1.J056060]. The first correction is concerned with the mathematical expression preceding equation (39) in Section IV, A. Description, 1. Algorithm. The expression $\Psi^* W_c \Psi = \Phi W_o \Phi^* = \Sigma$ should read $\Psi^* W_c \Psi = \Phi^* W_o \Phi = \Sigma$. The authors regret the inclusion of this error in the original manuscript.

The second correction pertains to the missing # exponent in various equations (45, 46, 47, 48) in Section V A. Description, 1. Algorithm on page 4026. This error was introduced after the authors reviewed the proof and the journals staff regrets the confusion this error has caused. The correct sentence before equation 45 is "We begin by collecting snapshots of data and arranging them as columns of matrices X and $X^{\#}$," followed by corrected equation 45:

$$X = [\boldsymbol{x}(t_1) \quad \boldsymbol{x}(t_2) \quad \dots \quad \boldsymbol{x}(t_m)] \in \mathbb{R}^{n \times m} \quad \text{and}$$
$$X^{\#} = [\boldsymbol{x}(t_2) \quad \boldsymbol{x}(t_3) \quad \dots \quad \boldsymbol{x}(t_{m+1})] \in \mathbb{R}^{n \times m}$$

Corrected equation 46:

$$X^{\#} = AX$$

Followed by the sentence "The matrix A may be defined by $A = X^{\#} X^{+}$, where X^{+} denotes the pseudoinverse of X."

Corrected equation 47:

$$\tilde{A} = U_r^T A U_r = U_r^T X^{\#} V_r \Sigma_r^{-1} \in \mathbb{R}^{r \times r}$$

Correction equation 48:

$$\boldsymbol{v}_i = \mu_i^{-1} X^{\#} V_r \Sigma_r^{-1} \tilde{\boldsymbol{v}}_i$$