Boelcs), and three Japanese universities (Fujimoto et al., Watanabe et al., and Shiratori et al.); measurements of blade-row interactions at Osaka Sangyo University, Japan (Adachi and Yamashita), General Electric (Manwaring and Kirkeng), German Armed Forces University Munich (Acton and Fottner), Technical University of Hannover (Sentker and Riess), and Central Institute of Aviation Motors (Saren et al.); measurements of the rotating stall characteristics due to distorted inlet flow into a high-pressure, five-stage compressor at the German Armed Forces University Munich (Jahnen et al.); measurements of centrifugal impeller and diffuser interactions near stall at the Japanese National Aerospace Laboratory (Yamane and Nagashima); and measurements of acoustic pulse propagation and reflection in a 10-stage axial compressor at the University of Cincinnati (Sajben and Freund).

It is apparent from this brief summary that research in the field of turbomachinery unsteady aerodynamics and aeroelasticity is vigorously being pursued in the major industrialized countries using sophisticated computational and experimental techniques. However, it is also apparent that much work remains to be done before an accurate prediction of most unsteady aerodynamic and aeroelastic turbomachinery phenomena is achieved. The uncertainties caused by the well-known transitional and turbulent flow modeling difficulties are greatly compounded by the complex flows typically encountered in turbomachines, especially at transonic and separated-flow conditions. Furthermore, there are insufficient data from carefully controlled experiments that can be used for the calibration of unsteady turbomachinery flow models. Therefore, active researchers in this field will appreciate the easy access to the latest developments collected in this book. Turbomachinery engineers and designers, project managers, professors, and graduate students of turbomachinery engineering who wish to inform themselves about the state of the art in this specialized field will find it an equally valuable source of information.

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Errata

One-Equation Turbulence Model of Spalart and Allmaras in Supersonic Separated Flows

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THE numerical solutions in Fig. 1 of this paper were not fully grid converged and should be replaced by Fig. 1 shown here.

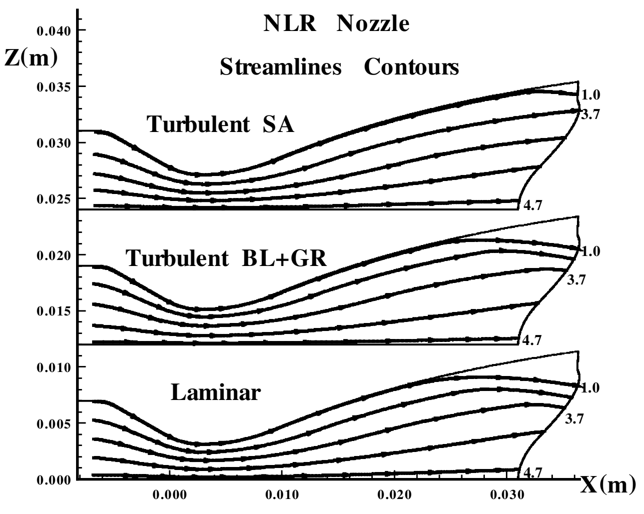

Fig. 1 Numerical streamlines inside a cold nozzle flow: GR, Granville theory.

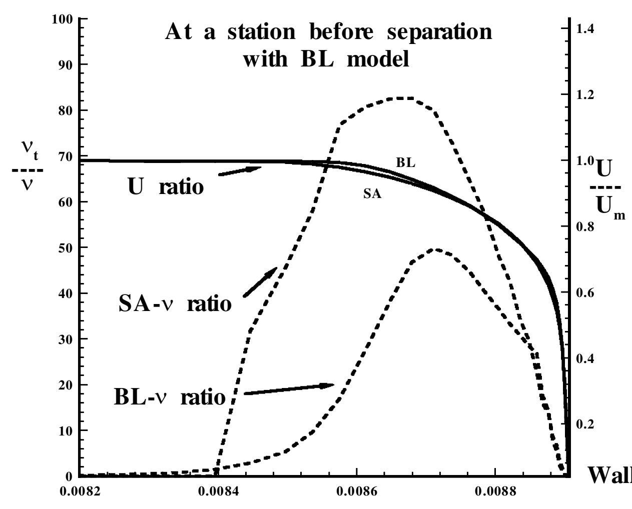

Fig. 2 Viscosity ratio comparison downstream from nozzle throat.

These solutions have been cross-checked by the Computational Fluid Dynamics Group at the von Karman Institute, Belgium. The sentence beginning on the 10th line in the second paragraph in the Results section on page 391 should read "The flow separation begins at 15 $\pm$ 0.4, 11 $\pm$ 0.4, and 4.5 $\pm$ 0.4 mm from the nozzle exit for the laminar, the BL (Baldwin and Lomax) turbulent, and the SA (Spalart and Allmaras) turbulent cases, respectively." The reverse flow after the separation is assumed to be laminar. The relaminarization capability in the SA model as shown in Fig. 3 in the paper remains unchanged. However, for the separation size, the tendency of the SA model to postpone the separation compared with the result from the BL model is attributed to the larger energy transfer from the core flow to the wall boundary, as shown in Fig. 2 here, with larger velocity gradients at the wall and a thicker boundary layer compared with those from the BL model. All other results and conclusions remain unchanged.