Computers & Fluids 98 (2014) 1–2

Contents lists available at ScienceDirect

Computers & Fluids

journal homepage: www.elsevier.com/locate/compfluid

Editorial

Celebrating the 80th Birthday of Professor Antony Jameson

The following issue of Computers and Fluids has been compiled to celebrate the 80th birthday of our friend and colleague Antony Jameson, who currently serves as the Thomas V. Jones Professor of Engineering in the Department of Aeronautics & Astronautics at Stanford University. Antony is widely recognized as a pioneer of Computational Fluid Dynamics (CFD), and over the last four decades has played a leading role in the field, publishing over 400 scientific papers.

Antony was born in Kent, UK. However he spent the majority of his early childhood in India, where his father was stationed with the British Army. After schooling at St. Edwards (India), Mowden School and then Winchester College, he also served in the British Army from 1953 to 1955. On leaving the Army, Antony worked on compressor design at Bristol Aero-Engines, before studying engineering at Cambridge University from 1955 to 1958. Subsequently he obtained a PhD in Magnetohydrodynamics from Cambridge and was a Research Fellow of Trinity Hall from 1960 to 1963. After leaving Cambridge, Antony worked as an Economist for the Trades Union Congress from 1964 to 1965, before returning to engineering as Chief Mathematician for Hawker Siddeley Dynamics in Coventry.

In 1966 Antony moved to the US, joining the Aerodynamics Section of Grumman Aerospace in Bethpage, New York. Initially he worked on the use of optimal control theory to design stability augmentation systems. This led him to devise a new method for solving the Sylvester equation $AX + XB = C$ and new approaches to the design of sparse control systems with a reduced number of interconnections. Subsequently he focused on the problem of calculating transonic flow, work which he continued after moving to the Courant Institute in 1972. In 1974 Antony was appointed Professor of Computer Science at the Courant Institute. He subsequently joined Princeton University in 1980, and in 1982 he was appointed James S. McDonnell Distinguished University Professor of Aerospace Engineering. He served as the first Director of Princeton's Program in Applied and Computational Mathematics from 1986 to 1988. Finally, in 1997 Antony moved across the country to Stanford University, taking up his current position as the Thomas V. Jones Professor of Engineering in the Department of Aeronautics & Astronautics, and a member of Stanford's Institute for Computational and Mathematical Engineering.

To list all of Antony's significant achievements would take many pages – however the most notable include development of the widely used Jameson–Schmidt–Turkel (JST) scheme, as well as various multi-grid strategies for steady flow problems, dual time-stepping schemes for unsteady flow problems, and algorithms for unstructured meshes culminating in the first Euler

Fig. 1. The plaque reads: "Presented to Antony Jameson by The Boeing Company on the occasion of his 60th birthday. In recognition of the CFD capabilities he created that were utilized in the aerodynamic design of these Boeing Airplanes".

http://dx.doi.org/10.1016/j.compfluid.2014.05.011
0045-7930/

calculation of the flow past a complete aircraft in December 1985. He also addressed the issue of aerodynamic design. In 1988 he showed how CFD could be merged with optimal control theory to design wings with minimum drag in supersonic and transonic flow, modeled by the potential flow or the Euler equations. In 1990 he gave the first demonstration of drag reduction of a transonic airfoil by an adjoint based numerical method. He followed up by extending the theory to the compressible Navier Stokes equations. In addition to his numerous algorithmic innovations, he also implemented them in the FLO, SYN and AIRPLANE codes, which have come to underpin the CFD capabilities of numerous aerospace companies world-wide. More recently, Antony has shifted his focus to developing a new generation of CFD tools, based on high-order accurate Flux Reconstruction methods for unstructured grids.

Antony has amassed a series of prestigious awards throughout his career, including the NASA Medal for Exceptional Scientific Achievement (1980), the Gold Medal of the British Royal Aeronautical Society (1988), Fellow of the AIAA (1991), the AIAA Fluid Dynamics Award (1993), Fellow of the Royal Society of London (1995), The Spirit of St. Louis Medal (1995), Foreign Associate to the National Academy of Engineering (1997), Fellow of the Royal Academy of Engineering (2005), the Theodorsen Lectureship Award from ICASE/NASA (1996), the Sir James Lighthill Distinguished Lectureship Award from Florida State University (2010), Doctor Honoris Causa from University Pierre et Marie Curie, Paris 6, (2001) and Doctor Honoris Causa from Uppsala University, Sweden (2003), and the Elmer A. Sperry Award (2006) from six Engineering Societies (ASME, IEEE, SAE, SNAME, AIAA, ASCE) for "Advancing the art of transportation whether by land, sea or air," (often awarded to corporations rather than individuals.) However, his impact on our field – and indeed society as a whole – is perhaps best summarized by Fig. 1 – which speaks for itself as a testament to his achievements.

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