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Author: Dr. Charles Lundquist
University of Alabama in Huntsville, United States

Dr. Shi Tsan Wu
University of Alabama in Huntsville, United States

INTERSECTION OF THE CAREERS OF RUDOLF HERMANN AND QIAN XUESEU

Abstract

Dr. Rudolf Hermann was born on December 15, 1904 in Leipzig, Germany. Dr. Qian Xuesu (Hsue-Shen Tsien in English) was born December 11, 1911 in Hangzhou, the capital of Zhejiang Province, China. They were contemporary pioneers in space system engineering and particularly in supersonic rocket aerodynamics. Rudolf Hermann was educated in Germany and subsequently led supersonic wind tunnel development and applications in Germany during World War II. Qian Xuesu received his undergraduate education in China and his graduate degrees in the United States, where he wrote early analytical papers on supersonic rocket aerodynamics. Specifically, in 1938, Qian (Tsien) published a theoretical paper on 'Supersonic Flow over an Inclined Body of Revolution'. An example in the paper was a body whose shape resembled the geometry of the German A4/V2 rocket. While supporting the successful development of the A4/V2, Hermann conducted supersonic wind tunnel measurements that agreed with the theoretical predictions by Qian. As the war in Europe approached an end, the United States Army Air Force asked Dr. Theodore von Karman to assemble a team of scientists to go to Germany to interview German scientists and engineers as the advancing U. S. armies over-ran their locations and facilities. Dr. Qian, a close associate of von Karman, was one of the team members who interviewed Dr. Hermann and his colleagues in Kochel, Germany at their wind tunnel facility. Hermann and Qian discussed the agreement between Qian's theories and Hermann's measurements. Thus the careers of Qian and Hermann intersected in an historic comparison of pioneering supersonic theory and experiment by leaders in these disciplines. Following the war, Hermann came to the United States, first to the Air Force Wright Field, then to the University of Minnesota and finally to the University of Alabama in Huntsville. Qian left the United States and returned to China in 1955. He had an excellent career in China and established himself as the father of the Chinese missile and space programs