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## Numerical, Analytical, Experimental Study of Fluid Dynamic Forces in Seals Volume 6: Description of Scientific Cfd Code Sciseal

By Mahesh Athavale

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 166 pages. Dimensions: 9.7in. x 7.4in. x 0.3in. The objectives of the program were to develop computational fluid dynamics (CFD) codes and simpler industrial codes for analyzing and designing advanced seals for air-breathing and space propulsion engines. The CFD code SCISEAL is capable of producing full three-dimensional flow field information for a variety of cylindrical configurations. An implicit multidomain capability allow the division of complex flow domains to allow optimum use of computational cells. SCISEAL also has the unique capability to produce cross-coupled stiffness and damping coefficients for rotordynamic computations. The industrial codes consist of a series of separate stand-alone modules designed for expeditious parametric analyses and optimization of a wide variety of cylindrical and face seals. Coupled through a Knowledge-Based System (KBS) that provides a user-friendly Graphical User Interface (GUI), the industrial codes are PC based using an OS2 operating system. These codes were designed to treat film seals where a clearance exists between the rotating and stationary components. Leakage is inhibited by surface roughness, small but stiff clearance films, and viscous pumping devices. The codes have demonstrated to be a valuable resource for seal development of future...



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