



The Fringe-Imaging Skin Friction Technique PC Application Users Manual

By Gregory G. Zilliac

Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 40 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. A personal computer application (CXWIN4G) has been written which greatly simplifies the task of extracting skin friction measurements from interferograms of oil flows on the surface of wind tunnel models. Images are first calibrated, using a novel approach to one-camera photogrammetry, to obtain accurate spatial information on surfaces with curvature. As part of the image calibration process, an auxiliary file containing the wind tunnel model geometry is used in conjunction with a two-dimensional direct linear transformation to relate the image plane to the physical (model) coordinates. The application then applies a nonlinear regression model to accurately determine the fringe spacing from interferometric intensity records as required by the Fringe Imaging Skin Friction (FISF) technique. The skin friction is found through application of a simple expression that makes use of lubrication theory to relate fringe spacing to skin friction. This item ships from La Vergne, TN. Paperback.

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