

PACKAGE ID - 001190IBMPC00 WFS1D4.3

KWIC TITLE - One-Dimensional Wavefront Sensor Analysis

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LIMITATION CODE -COPY **AUDIENCE CODE** - LIM

COMPLETION DATE - 12/12/1995 **PUBLICATION DATE** - 12/12/1995

DESCRIPTION - This software analyzes one-dimensional wavefront sensor data acquired with any of several data acquisition systems. It analyzes the data to determine centroids, wavefront slopes and overall wavefront error. The data can be displayed in many formats, with plots of various parameters vs time and position, including computer generated movies. Data can also be exported for use by other programs.

PACKAGE CONTENTS - Media Directory; Software Abstract; Media Includes Source Code, Object Library, Executable Module, Sample Problem Input;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - The line-scan camera image is broken into a number of fields that are user adjustable. A centroid of this data is taken within each field. This gives an estimate of the spot location. This set of spot locations is compared to a calibration set and the difference divided by the lenset focal length to produce a measurement of the wavefront slope. These wavefront slopes are integrated (across the spatial dimension) to produce the wavefront error.

COMPUTER - IBM PC

OPERATING SYSTEMS - MSDOS

PROGRAMMING LANGUAGES - Quick Basic 4.5

SOFTWARE LIMITATIONS - This program can only analyze about 400 lines of data before memory usage is exceeded. Procedures are included for breaking the data into smaller groups, analyzing them, and then putting the analyzed data back together.

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - This is a completely menu driven software package that allows complete analysis of wavefront sensor data. It will also trigger and run the data acquisition software so that it makes up a complete turn key wavefront sensor system for measurement

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UNIQUE FEATURES - (CONT) applications.

RELATED SOFTWARE - This software relies on the QuickPak Pro (ver 4.5 for DOS) software package by Crescent Software for many menu routines and utilities.

OTHER PROG/OPER SYS INFO - Image files: *.B, Centroid files: *.PKS, Wavefront slope files: *.DVA, Wavefront files: *.WFE or .GRD.

HARDWARE REQS - This system requires MSDOS 5.0 or later, and 640k of RAM, plus enough room on the hard disk for data storage. In addition, the program is significantly faster if 4 MB of RAM is configured as a RAM disk.

TIME REQUIREMENTS - The program can analyze a complete set of wavefront data in 1-2 minutes.

ABSTRACT STATUS - Submitted 8/8/97. Released AS-IS 2/19/98

SUBJECT CLASS CODE - 0

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
W CODES
DATA ACQUISITION
DATA ANALYSIS
OPTICS
OPTICAL SYSTEMS

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS