



General MACOS Interface for Modeling and Analysis for Controlled Optical Systems

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The General MACOS Interface (GMI) for Modeling and Analysis for Controlled Optical Systems (MACOS) enables the use of MATLAB as a front-end for JPL's critical optical modeling package, MACOS. MACOS is JPL's in-house optical modeling software, which has proven to be a superb tool for advanced systems engineering of optical systems. GMI, coupled with MACOS, allows for seamless interfacing with modeling tools from other disciplines to make possible integration of dynamics, structures, and thermal models with the addition of control systems for deformable optics and other actuated optics.

This software package is designed as a tool for analysts to quickly and easily use MACOS without needing to be an expert at programming MACOS. The strength of MACOS is its ability to interface with various modeling/development platforms, allowing evaluation of system performance with thermal, mechanical, and optical modeling parameter variations. GMI provides an improved means for accessing selected key MACOS functionalities. The main objective of GMI is to marry the vast mathematical and graphical capabilities of MATLAB with the powerful optical analysis engine of MACOS, thereby pro-

viding a useful tool to anyone who can program in MATLAB. GMI also improves modeling efficiency by eliminating the need to write an interface function for each task/project, reducing error sources, speeding up user/modeling tasks, and making MACOS well suited for fast prototyping.

This work was done by Norbert Sigrist, Scott A. Basinger, and David C. Redding of Caltech for NASA's Jet Propulsion Laboratory. For more information, contact iaoffice@jpl.nasa.gov.

This software is available for commercial licensing. Please contact Daniel Broderick of the California Institute of Technology at danielb@caltech.edu. Refer to NPO-48009.