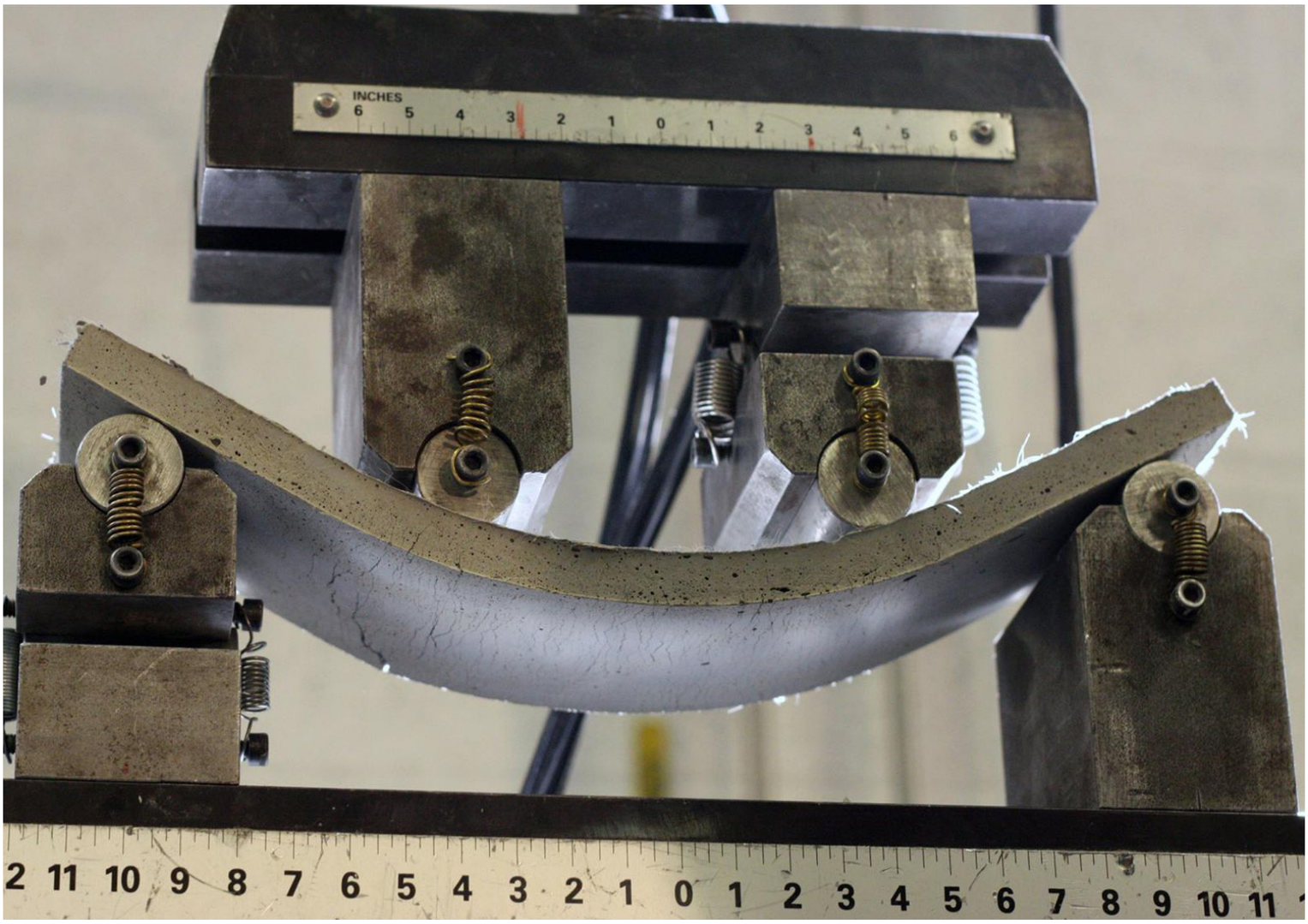


DIGITAL IMAGE CORRELATION

TEMA NOW UPGRADED WITH AN INTEGRATED 2D DIC MODULE

Digital Image Correlation (DIC) is a full-field image analysis method, based on grey value digital images, that can determine the contour and the displacements of an object under load. DIC is very effective at mapping deformation in macroscopic mechanical testing, where the application of specular markers provide the needed contrast to correlate images.

ACCURATE RESULTS

The tracking algorithms used in TEMA have been developed and refined for close to 30 years. Today, TEMA is the most accurate and feature-rich Motion Analysis software currently available. DIC measurments can reach to accuraccy levels of 0.01 pixels.

POWERFUL TOOLBOX

The modularity of the software gives the user an almost unlimited number of application areas. TEMA DIC includes the most powerful point tracking software on the market along with the surface (DIC) tracking module.

WIDE COMPATIBILITY

TEMA is compatible with all major camera brands on the market. Moreover, the software suite is capable of capturing and controlling image sequences from multiple camera makes - all in one single system.

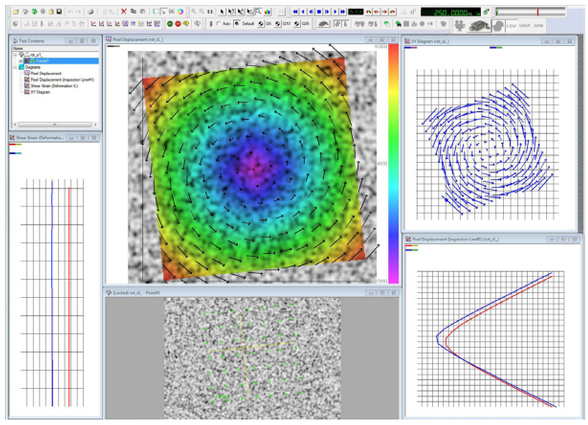
EASE OF USE

The TEMA user interface is designed to be flexible and intuitive to any person who is familiar with basic Windows functionality and workflow.

USING TEMA DIC

From loading an image sequence, to executing the tracking algorithms, to applying the chosen analytics and logic, to presenting the derived data - TEMA offers a straightforward workflow. Menu bars, tool bars and key bindings all provide a easy access to features and functions.

The user interface is fully synchronized: any change of parameters or set-up will directly effect all parts of the tracking session, updating results, graphs and tables.

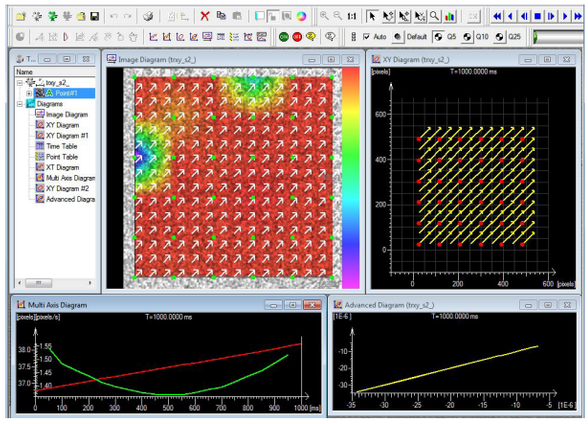


CAMERA CONTROL

TEMA integrates seamlessly an image capture module, controlling the camera with possibilities to affect the camera parameters. TEMA has already in the image capture mode automatic tools for controlling and improving the accuracy of the end result of a DIC analysis sequence.

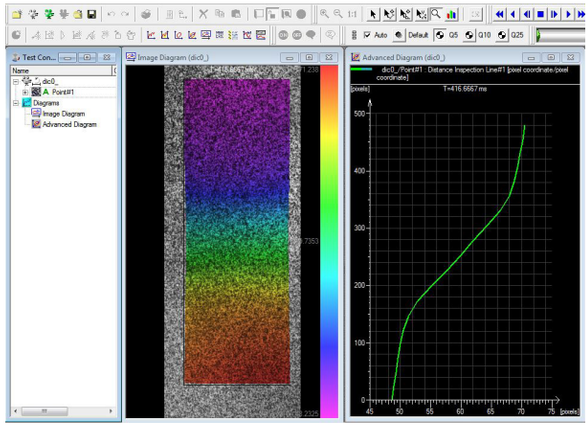
SET-UP

The user has to apply a speckle pattern onto the area of interest. Using a non-destructive special spray provided by Image System.



Camera and lightening are mounted on a stable but flexible 3 axis geared head, attached to perpendicular bar, with rough and fine position tuning. Easy calibration set up to correct both lens distortion and angled motion plane deviation between the camera and the specimen. All is done using integrated real time camera control software with live error estimation feedback for each test and setup. Digital image correlation analysis is done in one platform, camera control and analysis, immediate numerical and graphical results add to all the known and useful TEMA functionalities which keep on developed and improved for years – that brings great possibilities and improvements to the analysis process.

APPLICATION EXAMPLES



Material properties

- DIC offers characterization of material parameters far into the range of plastic deformation. Its powerful data analysis tools allow the determination of the location and amplitude of maximum strain, which are important functions in material testing.

Fracture mechanics

- DIC is ideal for fracture mechanics investigation. The full-field measurement delivers exact information about local and global strain distribution, crack growth, and can be used for the determination of important fracture mechanics parameters.

IMAGE SYSTEMS
Ågatan 40 ı SE-582 22 Linköping ı Sweden
info@imagesystems.se
www.imagesystems.se