Basir Pardazan Sanat Ltd.
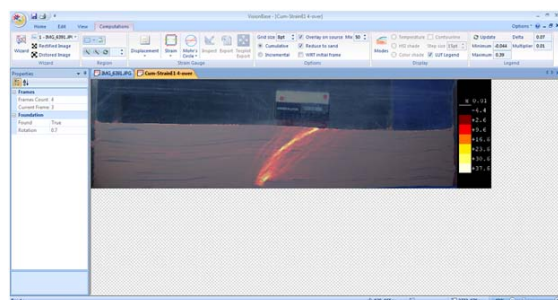
Vision Strain Gauge

Visual Detection of Displacement & Strain in Images

Basir Pardazan Sanat's vision strain gauge (VSG) provides the ability to track image points to detect the displacements and strains. BPS VSG uses advanced image processing methods and calibration techniques to find two-dimensional displacements and strains in pixels and milimeters in possibly all points around the region of interest in your images.

The BPS Company can give you technical support on how to obtain images of high quality and uniformity by proper illumination and imaging setup, as well as calibrate your camera. For fast occurring processes (high frequency), you may need special imaging cameras.

VSG software GUI (graphical user interface), in which the shear strain of sand grains are shown imposed on the main image.

Some outputs from the software – deformation mesh (top) and the displacement of particles (bottom)

It is noteworthy that the VSG software is initially developed to determine the displacements and strains in sand for seismology and earthquake engineering research. However, it is applicable for such studies as mechanical stretch or pressure tests, quality control tests, biomechanical, and aerospace research too.

Basir Pardazan Sanat's vision strain gauge (VSG) provides the ability to track image points to detect the displacements and strains. BPS VSG uses advanced image processing methods and calibration techniques to find two-dimensional displacements and strains in pixels and millimeters in possibly all points around the region of interest (where the calibration has been focused) in your images. In case of uncalibrated images, measurements with millimeter unit and image rectification facility (removal of lens distortion) will not be possible.

Programming Capabilities

- ✓ Tracking object points in images
- ✓ Measurement of horizontal/vertical normal and shear strains using Green strain formulations
- ✓ Measurement of incremental horizontal and vertical normal strain rates
- ✓ Measurement of principal strains (Mohr's circle)
- ✓ Ability to superpose the results on the real image (overlay display)
- ✓ Measurement of cumulative & incremental displacements of points
- ✓ Ability to present metric results (in millimeters) in case of calibrated camera.
- ✓ Ability to export numerical results to Microsoft Excel and Tecplot
- ✓ Compatible with 32-bit and 64-bit systems
- ✓ Protected with Crypthod dongle

The program's protecting lock can be bound to a flash disk (dongle mode) or a specified system (hardware mode).