GPA generates fully quantitative deformation and strain maps from standard HREM images.

GPA is based on geometric phase algorithms originally developed by Martin Hýtch [1].

**Key Features**

- Determines geometric phase images using choice of masks and real-space averaging [1]
- Generates 2D deformation tensor from digital HREM images (see left for local rigid-body rotation of crystalline lattice determined from original 4000 pixel square image [2])
- Allows calculation of colour maps and contours of strains (see above right for stresses around an edge dislocation [3])
- Corrects for optical distortions due to the projector lens system of the electron microscope [4]

**References:**