

(B) Development of code for extraction of phase data from optical interferometry images

Background: The interferometric images consist of dark and bright fringes. The variation of intensity is sinusoidal in nature, which means the variation of intensity from a dark to bright (or bright to dark) fringe varies as a sine or cosine function of distance. This variation in intensity is because of the difference in phase between two interfering waves that lead to the formation of fringes.

From the point of view of the present project, one can start with the following facts in mind

- The phase and the intensity are related by a function, the form of which depends on the type of interference.
- The fringes may be straight or circular (or of a complex shape, for that matter).

Objective: A code (preferably on MATLAB/Python) is to be developed to extract the phase data from the recorded interferometric images. The images will be monochromatic and the fringes will be of standard shape (straight line or circle) to begin with. The code is to be developed for the available and well-established algorithms only.

Desirable skills: One who is interested should have the understanding of;

1. Abel inversion for symmetric systems
2. Image analysis using Fourier and Fourier-Henkel Transform

Eligibility: Only students of M.E./ M. Tech Computer Science or MCA or Integrated M.Sc (Mathematics) branches can submit their application at following email addresses

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