The application of convergent multi-image correlation in determining displacements in beams

Abstract :

Present structural and materials laboratory practice uses transducers (linear variable differential transducers- LVDTs or dial gauges) in determining the displacement of beams. As such displacements can only be measured at points where transducers are fixed and in many cases would be limited. Displacements at any other points, if desired, would be obtained by calculations. This study highlighted the use of photogrammetric multiple images matching technique to measure the vertical displacements. Laboratory experiments involving load test on concrete structures were performed. Validation of the results was done by means of comparing the photogrammetric output against those obtained from the LVDTs. Statistics have shown that the differences in displacements between the two methods are not significant.