

Project: Application of Digital Image Correlation (DIC) Technology for Strain Measurement - Review and Case Study

Responsible Researchers: Rodolpho Gardenal Fabbre; Dr. Bruno Agostinho Hernandez, Dr. Edson Antonio Capello Sousa, and Dr. Marcelo Sampaio Martins.

Project Description: This work conducts a bibliographic review on Digital Image Correlation (DIC), evaluating this strain field measurement technique as a potential replacement for Strain Gauges. DIC is a non-invasive method offering advantages such as non-contact measurement, capability to measure strains from 0.01% to 100%, 2D and 3D analysis, and applicability from microscopic scales to large structures. The technique is based on correlating digital images of a speckle-patterned surface captured during loading to calculate displacement and strain fields.