Damage characterization in laminated plates using digital Sherography

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Abstract

In this work we describe the experimental characterization of the delimitation in a carbon fibre plate based on the measurement of displacement gradient for different loading conditions. The Michelson shearing arrangement with time modulation technique was used in quasi-static measurements and Mach-Zehnder shearing with spatial modulation technique for the dynamic measurements. The objective of the experimental procedure was to investigate the best technique for the identification of two different sizes delaminations in the carbon fibre plate. Another objective of this study was to compare the results from static and dynamic loads.

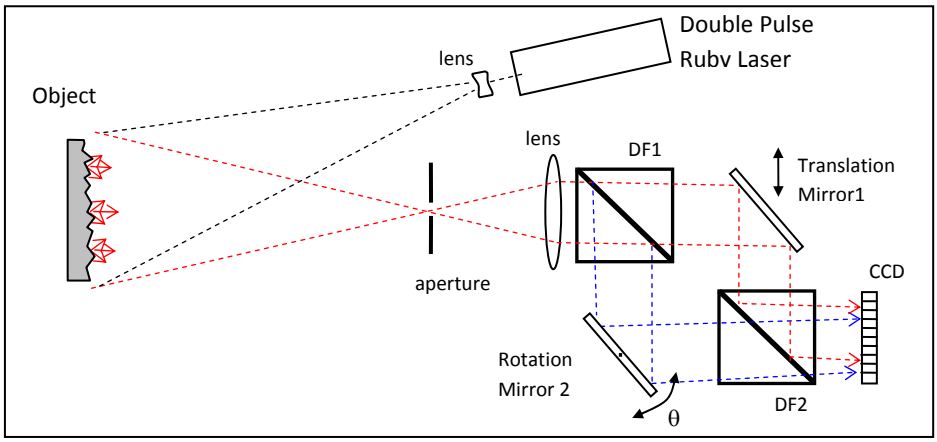

Fig. 1 – Optical arrangement of *Michelson shearing interferometer*.

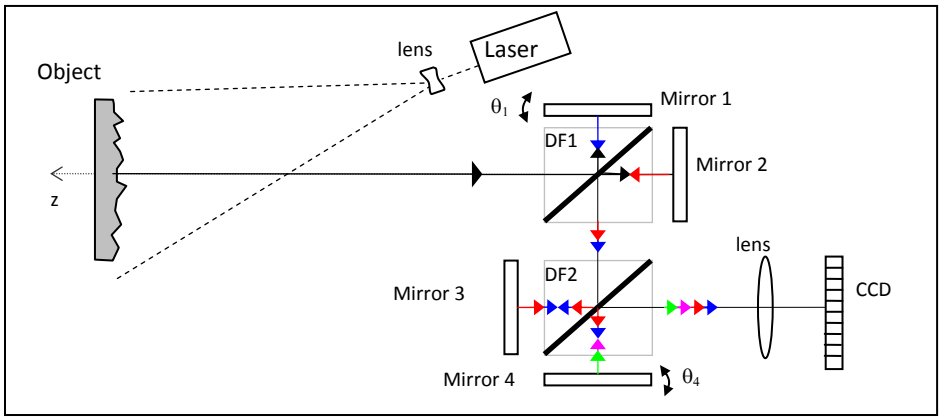

Fig. 2 – Optical arrangement *Mach-Zehnder shearing interferometer*.