

Active phase stabilisation in electronic speckle pattern interferometry without additional optical components

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Abstract

We present a system for electronic speckle pattern interferometry (ESPI) using fibres and spatial phase shifting with active phase stabilisation. The control loop for the synthetic heterodyne phase stabilisation system is included in the measuring set-up. No additional optical components are required and the phase is stabilised at one image point of the field of measurement. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

Fig. 1 (top) shows typical phase fluctuations $\varphi_g(t)$ measured within a bulk-optics Mach–Zehnder inter-

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and other papers on single mode fibres can be found in Ref. [4].