

Tunable eight-frame filters with arbitrary steps for temporal phase shifting.

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Optik - International Journal for Light and Electron Optics. Volume 126, Issue 24,
December 2015, Pages 5083–5087

doi:10.1016/j.ijleo.2015.09.135

Abstract.

We report a set of eight-frame filters to be used in temporal phase shifting. The result is an analytical expression that generates a family of tunable novel filters. These filters are obtained from the two-frame algorithm and a set of eight-frames or images. A table with several cases analyzed is presented. The analytical expression of the detuning error is obtained to demonstrate the broadband response of the filters. Finally, several simulations of the detuning error of the filters are depicted to corroborate the robustness and usefulness of such filters.

Keywords

Metrology; Phase measurement; Fringe analysis; Phase shifting interferometry