

Complex Amplitude Spatial Light Modulator





Overview

The method is a generalization of the well-known concepts of bit plane representation and decomposition for ordinary gray scale digital images and relies on forming a properly weighted superposition of binary SLMs. Imperfections and nonrobust behavior of practical multilevel spatial light modulators (SLMs) degrade the performance of many proposed full-complex amplitude modulation schemes. We propose a generic method, by which, out of K binary (or 1bit) SLMs of size $M \times N$, we effectively create a new $2K$ -level (or K bit) SLM of size $M \times N$. This method combines several neighboring micro-mirror pixels into a giant single superpixel, in which the light field's amplitude and.



Complex Amplitude Spatial Light Modulator

Spatial Light Modulator with Phase and Amplitude Control for



A single layer phase and amplitude spatial light modulator for holographic displays is proposed. The device is 0.7 microns thick and can achieve $>1.97 \pi$ phase control for 30-90% intensity, and more

Arbitrary Orthogonal Polarization Decomposition and Routing With

Arbitrary Orthogonal Polarization Decomposition and Routing With Complex Amplitude Modulation via Wheel-of-Fortune-Inspired Metasurfaces



Complex modulation Diffractive Optical Elements implemented in a

In this work, we propose to generate complex modulation with a single SLM for optimizing the performance of DOEs. For that, we fill, as evenly as possible, the Argand plane, representing the

Full-complex amplitude modulation with binary spatial

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Complex spatial light modulation capability of a dual layer in-plane

Complex spatial light modulator (SLM), which can simultaneously control the amplitude and phase of light waves, is a key technology for wide-range of wave-optic technologies including holographic



Full-complex amplitude modulation with binary spatial light modulators

Most practical SLMs perform only a restricted type of modulation on the incoming light, such as amplitude-only or phase-only modulation, and even that restricted modulation is imperfect. These

High Quality Aluminum Housing with Compact Size

- Sturdy and Durable
- Anti-corrosion



High Quality Multi-Depth Computer Generated Holography based on

Phase-only holograms (POHs) are preferred in CGH for their higher phase modulation efficiency and freedom from conjugate image interference during reconstruction, making them suitable with direct





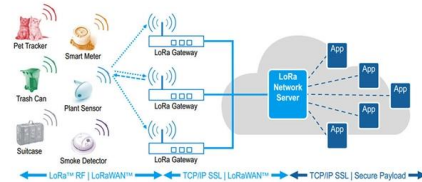
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High throughput diffractive multi-beam femtosecond laser processing

High throughput femtosecond laser processing is demonstrated by creating multiple beams using a spatial light modulator (SLM). The diffractive multi-beam patterns are modulated in



High-fidelity and high-speed wavefront shaping by

High-precision light manipulation is crucial for delivering information through complex media. However, existing spatial light modulation devices face a



Full-complex amplitude modulation with binary spatial light modulators

1. INTRODUCTION Spatial light modulators (SLMs) are dynamically programmable two-dimensional (2D) optical masks on which computer-generated holograms (CGHs) are written to synthesize light



Complex-valued scatter compensation in nonlinear microscopy

Furthermore, our method is practically self-aligning. We also present a simple way to implement C-DASH using a single reflection off a phase-only spatial light modulator. We provide a thorough

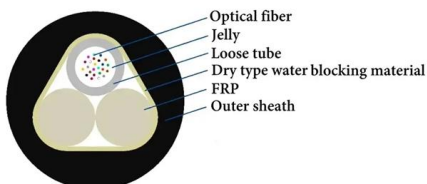
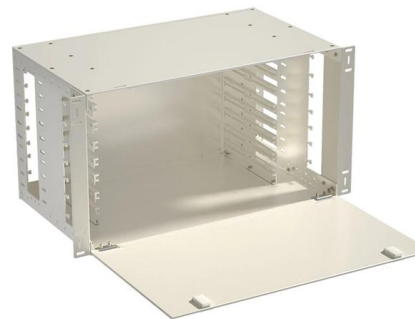


Spatial light modulator via optically addressed metasurface

A metasurface-based spatial light modulator brings the pixel size down to the submicrometre scale while demonstrating real-time complex-amplitude holography, three

Complex spatial light modulation capability of a dual layer in-plane

Complex spatial light modulator (SLM), which can simultaneously control the amplitude and phase of light waves, is a key technology for wide-range of wave-optic technologies including



Experimental synthesis of vector-twisted beams with controllable

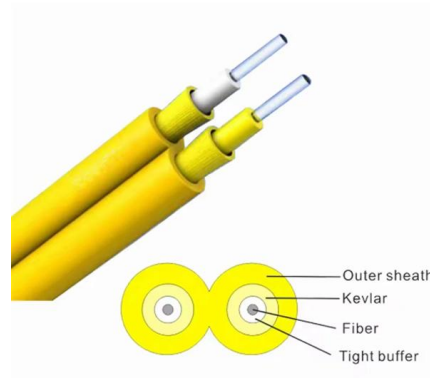
Abstract We propose a protocol for efficient synthesis of vector-twisted beams with higher-order Poincaré polarization states via the random vector-mode decomposition method, where the

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Complex Amplitude Modulation Using a Phase-Only Spatial Light

We report what to our knowledge is a new technique for encoding both amplitude and phase information onto a single binary-valued spatial light modulator.

Achieving higher spatial resolution in complex amplitude modulation

This paper proposes a novel pixel shift-based dual-phase modulation method (PS-DPMM) designed to enhance the spatial resolution of complex amplitude modulations.



A crosstalk-reduced method of complex fields encoding using a single

Crosstalk is a difficult problem in complex amplitude modulation, which limits the quality of the reconstructed complex amplitude and the practicality of complex amplitude modulation. To



Full-complex amplitude modulation with binary spatial light modulators

Imperfections and nonrobust behavior of practical multilevel spatial light modulators (SLMs) degrade the performance of many proposed full-complex amplitude modulation schemes.



Complex-Valued Holographic Radiance Fields

We propose complex-valued holographic radiance fields, a method that optimizes scenes without relying on intensity-based intermediaries. By leveraging multi-view images, our method directly optimizes a

Toward high-quality hologram generation via a complex

Spatial light modulators, as dynamic flat-panel optical devices, have witnessed rapid development over the past two decades, concomitant with the advancements in micro- and opto



Multi-color complex spatial light modulation with a single

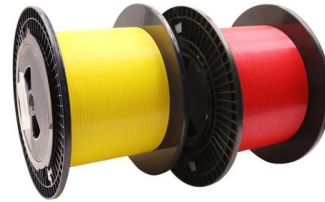
Our demonstrated method allows multi-wavelength spatial light complex amplitude modulation with a single DMD. This method converts the light field of multiple wavelengths to a binary

Inspection of complex amplitudes of spatial



light modulators using

We propose a method to get the phase and amplitude modes of an electrically driven spatial light modulator (SLM) device using the formation of moiré patterns. It is found to be a fast

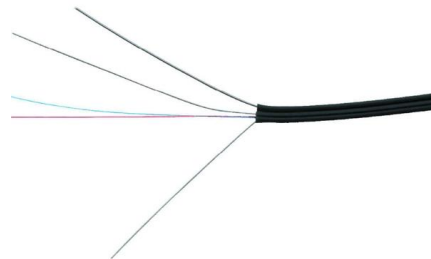


Complex amplitude modulation by use of liquid-crystal spatial light

We propose to study the conditions for implementation of complex amplitude modulation on standard liquid-crystal spatial light modulators when illuminated by polarized light. The spatial light modulators

Complex Amplitude Modulation Using a Phase-Only Spatial Light Modulator

To achieve complex amplitude modulation using a phase-only spatial light modulator, it is spatially varied diffraction efficiency in the first order direction by modulating the phase depth of a



Comparison of nematic liquid-crystal and DMD based

: Digital micro-mirror devices (DMDs) have recently emerged as practical spatial light modulators (SLMs) for applications in photonics, primarily due to their modulation



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