

## **The digital laser: on-demand laser modes with the click of a button**

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### **ABSTRACT**

In this paper we will outline our recent advances in all-digital control of light. Importantly, we will outline how to create a so-called “digital laser”, where a conventional laser mirror is replaced with a phase-only spatial light modulator. This allows the mirror properties to be dynamically changed by altering only the image sent to the device: on-demand laser modes. We demonstrate a myriad of laser beams that can be created from the same device without any realignment or additional custom optics.

**Keywords:** laser resonators, digital laser, digital holograms, transverse modes