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Multilayer Memory in a Shift-multiplexed Hologram Using a Fiber Array

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Abstract

Multilayer storage in a shift-multiplexed holographic disk is proposed. An optical head comprising a fiber array is used for multiplayer storage in a LiNbO₃ holographic disk. High longitudinal selectivity of spherical reference waves is obtained and permits the implementation of multiplayer storage in the hologram. The technique yields the efficient usage of dynamic range and promotes the storage capacity potentially.