EFFECT OF OPTICAL INTERACTION ON EFFICIENCY OF SPATIAL SUBHARMONICS GENERATION

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S u m m a r y

The nonlinear mixing of a subharmonic wave with waves recording the principal grating is studied by the example of spatial subharmonics in photorefractive CdTe:Ge. We show an importance of optical amplification for the efficiency of subharmonic generation, but not for the threshold of its excitation. Configurations are proposed for recording, in which a subharmonic wave is enhanced due to the optical interaction with the pump waves. It is shown that the subharmonic intensity can be increased by nearly two orders of magnitude by an appropriate choice of polarizations or the intensity ratio of the recording beams.