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摘要: In this paper we study the origin and the effect of amplitude and phase noise on laser optical feedback imaging associated with a synthetic aperture (SA) imaging system. Amplitude noise corresponds to photon noise and acts as an additive noise; it can be reduced by increasing the global measurement time. Phase noise can be divided in three families: random, sinusoidal, and drift phase noise; we show that it acts as a multiplicative noise. We explain how we can reduce phase noise by making oversampling or multiple measurements depending on its type. This work can easily be extended to all SA systems (radar, laser, or terahertz), especially when raw holograms are acquired point by point. (C) 2012 Optical Society of America
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