“Super Phase Oscillations”

John Howell
Hebrew University of Jerusalem

Much effort has gone into increasing the number of fringes in interference patterns using quantum techniques. Here I will show that it is possible to get many $\pi$ of phase rotation or polarization rotation while only rotating a polarizer through a few degrees. However, it is still fundamentally bounded by information theoretic considerations. I will discuss a perhaps somewhat interesting twist in that while loss typically kills quantum improvements, it is necessary to increase classical fringe frequency.