Fig. 5: (a) Sum of phases (b) wrapped form of sum of phases (c) Difference of phases (d) wrapped form of difference of phases. The phase values are in radians.

4. Conclusion

This paper proposes a new method for simultaneous measurement of in-plane and out-of-plane displacement based on pseudo-Wigner-Hough transform using a single moiré fringe pattern. The PWHT based phase parameter estimation is successfully implemented for the accurate estimation of multiple interference phases. The proposed phase estimation method is robust against the object beam intensity variations, making the method suitable for practical applications. Both simulation and experimental results are provided to substantiate the effectiveness of the proposed method in case of two dimensional displacement measurement.