

Computational Optical Measurement: Progress and Hints

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Full-field phase measurement techniques play an important role in advance optical metrology and experimental mechanics. The following techniques will be introduced:

1. real-time polarization phase-shifting technique for dynamic phase measurement;
2. windowed Fourier transform for fringe pattern analysis;
3. unification of phase-shifting algorithms;
4. unification of carrier fringe pattern analysis methods;
5. theoretical aspects of fringe projection profilometry .

All these works are relevant to my PhD study, but most of them are quite recent. I will try to get some hints from these works. In the meantime, I will also highlight the important contributions from Japan colleagues who have influenced these techniques.

Finally, I will introduce the International Forum on Computational Optical Measurement and Education (COME), which seems to shares the same goal as the International Workshop on Advanced Experimental Mechanics for Students and Young Researchers (IWAEM).

Biography

Dr Qian Kemaο is an Associate Professor in the School of Computer Science and Engineering at Nanyang Technological University (NTU). He got his BE, ME and PhD degrees from University of Science and Technology of China (USTC). His research interests include computational optical measurement, parallel computing, image processing, and computer vision. He is an Editor of Optics and Lasers in Engineering, conference co-chair of COME2019-2023, icOEPN2016~2023, and technical co-chair of IWAIT2016-2023.