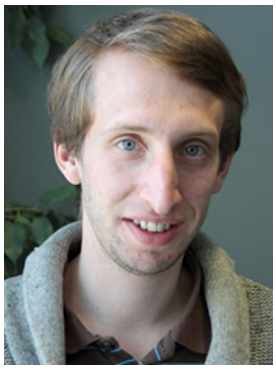
THE CHINESE UNIVERSITY OF HONG KONG

Department of Physics

COLLOQUIUM

Modern Holography, from Fundamental Adventures with Incoherent Light to Clinical Applications

by



Dr. Matz LIEBEL
JIN MINECO Young Investigator
ICFO -The Institute of Photonic Sciences, Spain

Date: *May 10, 2022 (Tuesday)*
Time: *3:30 - 4:30 p.m.*
Join ZOOM Meeting: *https://bit.ly/3Ltu0Qy*

ALL INTERESTED ARE WELCOME

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Abstract

Digital holography, a computational take on an almost 100-year-old methodology allows replacing complex and costly experiments with software: a fantastic opportunity given the explosion in computing power and available algorithms. In this talk, I will tell you how digital holography works, why you should consider using it and what it can do for you. To highlight these features, I will discuss examples of our recent work ranging from fundamental experiments on single-photon self-interference[1,2] or absolute phase measurements of plasmonic particles[3] to digital holography-based sensing platforms for cancer-marker detection[4]. Finally, I will conclude with some work-in-progress towards robust holographic sensing platforms at the limits of sensitivity, specificity and accuracy.

[1] M. Liebel, N. Pazos-Perez, N.F. van Hulst and R.A. Alvarez-Puebla; Nat. Nanotech. 15, 1005-1011 (2020)
[2] M. Liebel, J. Ortega Arroyo, V. Sanz Beltrán, J. Osmond, A. Jo, H. Lee, R. Quidant and N.F. van Hulst; Sci. Adv. 6, eabc2508 (2020)
[3] L. Saemisch, N.F. van Hulst and M. Liebel; Nano Lett. 21, 4021-4028 (2021)
[4] U. Ortiz-Orruño, A. Jo, H. Lee, N.F. van Hulst and M. Liebel; Nano Lett. 21, 317–322 (2021)

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