

# Joint CQSE & NCTS Seminar

2021  
Dec. 24, Friday

**TIME** Dec. 24, 2021, 2:30~3:30pm  
**TITLE** Synthetic Gauge Potentials for the Dark State Polaritons in Atomic Media  
**SPEAKER** Wen-Te Liao (Associate Professor, Department of Physics, National Central University)  
**PLACE** Rm104, Chin-Pao Yang Lecture Hall, CCMS & New Physics Building, NTU

## **Abstract:**

The quest of utilizing neutral particles to simulate the behavior of charged particles in a magnetic field makes the generation of the artificial magnetic field of great interest. We put forward an optical scheme to generate effective gauge potentials for stationary-light polaritons in the static laboratory frame. To demonstrate the capabilities of our approach, we present a recipe for having dark-state polaritons in degenerate Landau levels. Our scheme paves a novel way towards a versatile quantum simulator for mimicking different Hamiltonians.

## **Biography Brief:**

### **Work Experience**

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Aug. 2019 – now	<b>Associate Professor</b> Physics Department, National Central University (Taiwan)
Aug. 2015 – July 2019	<b>Assistant Professor</b> Physics Department, National Central University (Taiwan)
Oct. 2014 – July 2015	<b>Postdoc</b> Center for Free Electron Laser Science at DESY (Germany)
April 2013 – Sep. 2014	<b>Postdoc</b> Theory Division of Max Planck Institute for Nuclear Physics (Germany)

### **Education**

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April 2010 – April 2013	<b>Ph.D. in Physics</b> Heidelberg University & IMPRS-QD (Germany) Ph.D. thesis in the group of Honorarprof. Dr. Christoph H. Keitel (Theory Division of Max Planck Institute for Nuclear Physics) Ph.D. thesis : Coherent Control of Nuclei and X-Rays.
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Sep. 2006 – July 2008      **M.S. in Physics**  
Department of Physics, National Tsing Hua University (Taiwan)  
M.S. thesis in the group of Prof. Dr. Ite Albert Yu (Ultracold Atom Lab.)  
M.S. thesis : Theoretical Study of Stationary Light Pulses in  
Electromagnetically Induced Transparency Medium.

Sep. 2002 – June 2006      **B.S. in Physics**  
Department of Physics, National Changhua University of Education  
(Taiwan)

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### **Appointment**

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Jan. 2021 – now      **Center Scientist**  
Physics Division of National Center for Theoretical Sciences (NCTS)

Aug. 2019 – now      **Editor**  
Chinese Journal of Physics

