Physics
AT QUEENS COLLEGE

Colloquium Notice

Can-Ming Hu

University of Manitoba, Canada

Unidirectional Invisibility in Cavity Magnonics

Cavity Magnonics (also known as Cavity Spintronics [1] and Spin Cavitronics) is an emerging field that studies the strong coupling between cavity photons and collective spin excitations such as magnons. It connects some of the most exciting modern physics, such as quantum information and quantum optics, with one of the oldest science on the earth, the magnetism.
So far, most studies in this new field have been focused on coherent magnon-photon coupling, which enables diverse transducing functions in quantum and spintronics systems [2]. In this talk I will introduce an intriguing dissipative magnon-photon coupling governed by a non-Hermitian Hamiltonian [3], which describes the physics of open quantum systems. It leads to level attraction [3], exceptional points [4], and nonreciprocal photon transmission [5]. This stream of research may open the avenue for developing open cavity magnonics that enables directional control of quantum and spintronics systems.

[1] C.-M. Hu, Phys. in Canada, 72, No. 2, 76 (2016); Y.P. Wang and C.-M. Hu, J. Appl. Phys. 127, 130901 (2020).
[2] D. Lachance-Quirion, et al., Appl. Phys. Express 12, 070101 (2019).
[3] M. Harder, et al., Phys. Rev. Lett., 121, 137203 (2018).
[4] D. Zhang, et al., Nat. Commun. 8, 1368 (2017).
[5] Yi-Pu Wang, et al., Phys. Rev. Lett., 123, 127202 (2019).

==========

Attending this Meeting:

Topic: Colloquium : Can-Ming Hu
Time: Oct 5, 2020 12:15 PM Eastern Time (US and Canada)

Join Zoom Meeting
https://us02web.zoom.us/j/82565418338?pwd=WEgxcUJXZFMvay9POE9yNnlLK1hOUT09

Meeting ID: 825 6541 8338
Passcode: 284075
One tap mobile
+16468769923,,82565418338# US (New York)
+13017158592,,82565418338# US (Germantown)

Dial by your location
+1 646 876 9923 US (New York)
+1 301 715 8592 US (Germantown)
+1 312 626 6799 US (Chicago)
+1 408 638 0968 US (San Jose)
+1 669 900 6833 US (San Jose)
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
Meeting ID: 825 6541 8338
Find your local number: https://us02web.zoom.us/u/kclE9ZWNMG

Monday
October 5, 2020
Starts at **12:15 pm**
Physics Conference Room, SB B326