



THE CHINESE UNIVERSITY OF HONG KONG  
*Department of Physics*  
SEMINAR

# Towards Precision Astrophysics for Warm Ionized Gas

*by*

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*Date: April 8, 2021 (Thursday)*

*Time: 10:00 - 11:00 a.m.*

*Join ZOOM Meeting: <https://qrgo.page.link/4DB9W>*



ALL INTERESTED ARE WELCOME

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## Abstract

The interstellar medium is the fuel for star formation and AGN, and the sink for their feedback energy. It also records the history of star formation in its elemental abundances. The warm ionized gas is a major component of the ISM and has been extensively studied. However, there are still a number of mysteries about the ionization mechanisms for such gas in quiescent galaxies and quiescent regions of galaxies. Even for star-forming regions which are most well studied, there are still a large number of discrepant results in the literature about their metallicity, their elemental abundance pattern, and ionization states. I would present our efforts in solving these mysteries and resolving those discrepancies, and describe a roadmap towards an era in which we can model the astrophysics of warm ionized gas with precision, in the same style as Precision Cosmology. I will also introduce the design of a cost-effective, high spectral resolution, integral field spectrograph. When paired with a small telescope like a telephoto lens or arrays of it, it could provide unprecedented data to help us better understand star-forming HII regions and the feedback of star formation.