THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
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Challenges and Opportunities from Gravitational Waves

by

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Place: Rm. G26, Science Centre North Block, CUHK

ALL INTERESTED ARE WELCOME
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Abstract

The gravitational wave (GW) community has numerous exciting discoveries in the past 7 years, from the first detection to a catalog of ~80 GW events, containing all sorts of surprises such as binary neutron stars and neutron star-black hole mergers. In the coming decade, there will be next-generation facilities such as the third-generation GW detectors network and space-based GW observatory, that will provide many more surprising events.

There are quite a number of open modeling and data analysis problems in GW that await to be solved in order to unlock the full potential of next-generation detections. Despite the recent rapid development of machine learning and efforts trying to solve these problems in GW, it seems GW has a number of traits that make applying machine learning to GW difficult. In this talk, I will discuss a number of challenges and opportunities in GW, and some insights from GW on how we should apply modern techniques such as machine learning to physical science in general.

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