



***16<sup>th</sup> December 2020 - 2:00 p.m.***

Virtual meeting room in ZOOM (ID: 982 9010 7112 / PW: 689493)

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## **Multidimensional correlation spectroscopies for revealing quasiparticle correlations in the ultrafast regime**

In the quantum aggregates, the transport and dephasing of delocalized Frenkel excitons give rise to a multitude of coherent phenomena that are of fundamental interest for their plausible role in the conceptualization and engineering of the artificial light-harvesting systems. The topic has been attracting a proportionate amount of theoretical-experimental attention over the last two decades.

However, the time-domain spectroscopic techniques that may reveal the nature of quasiparticle correlation in the presence of phonon-induced transport, relaxation, and dephasing are limited. In this talk, I will discuss the theoretical proposal of such multidimensional correlation spectroscopies that may characterize the quasiparticle correlations in the ultrafast regime. The dependence of these techniques on the statistical nature of the photonic source, i.e., the driving modes will be discussed.