

Joint Event

PHYSICAL MATHEMATICS SEMINAR

and

**NUMERICAL METHODS FOR PARTIAL
DIFFERENTIAL EQUATIONS SEMINAR**

**Plasmonics on two-dimensional materials:
Flavors of dispersion and homogenization**

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ABSTRACT:

The advent of two-dimensional materials such as graphene and black phosphorus with a wide range of optical and electronic properties offers the promise of excellent efficiency in light-matter interaction at the nanoscale. These systems may allow for the propagation of fine-scale electromagnetic waves, called surface plasmon-polaritons (SPPs), which can defy the usual diffraction limit.

In this talk, I will discuss recent theoretical progress in understanding how the material geometry, e.g., the presence of edges and curvature as well as the formation of periodic layered structures in the presence of material anisotropy, may affect the SPP propagation. To this end, I will formulate and analyze physically inspired boundary value problems for the time-harmonic Maxwell equation,

TUESDAY, NOVEMBER 5, 2019
2:30 PM – 3:30 PM
Building 2, Room 131

*Reception following in Building 2, Room 290
(Math Dept. Common Room)*

<http://math.mit.edu/seminars/pms/>