

Monday Nov. 18, 2019

4-5pm

EEB 248

Speaker:

Alan Willner (USC)

Title:

**High-Capacity Free-Space Communication Links
Using Mode-Division Multiplexing**

Abstract:

Multiple orthogonal beams, each located on a different spatial mode and carrying independent data, can be simultaneously transmitted between two apertures. This form of spatial multiplexing, known as mode multiplexing, has the potential to significantly increase communication system capacity and spectral efficiency. Of particular note is the multiplexing of orbital-angular-momentum modes for high-capacity free-space optical and millimeter-wave links. We will discuss transmission results, design guidelines, mitigation of turbulence and crosstalk, and classical and quantum channels.