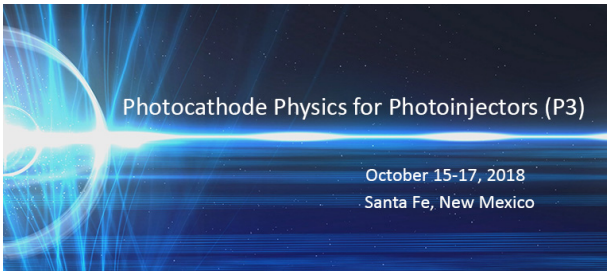

Contribution ID: **12** Type: **not specified**

Requirements and Challenges of Photocathodes for Free Electron Laser Applications

Monday 15 October 2018 13:30 (20 minutes)

Photocathodes are the source of electrons for nearly all modern accelerators. They are widely used due to their flexibility to meet a broad variety of beam requirements and are particularly important for machines relying on high-brightness beams. In this presentation, we will investigate the requirements and challenges for photocathodes used in linac-driven free electron lasers. The cathode requirements for an FEL can cover a wide-range, depending on the desired average/peak power and the laser wavelength. To meet the requirements, photocathodes have to be selected that generate beams with the emittance, bunch charge, and temporal response to match into the undulators appropriately, and at the same time maintain long operational lifetime. We will discuss the important beam properties and requirements for FELs, how various photocathode are used to meet these needs, and take a look at future directions.

Presenter: Dr DUNHAM, Bruce (Stanford Linear Accelerator)

Session Classification: Session 3

Track Classification: Session 3: Application Oriented Research: FEL