**Performance and Scalability of XGC Fusion Code on Summit**
Ed D'Azevedo, XGC CAAR Team

Oak Ridge National Laboratory

dazevedoef@ornl.gov

**Abstract**

XGC is a modern first-principles gyrokinetic code using particle-in-cell (PIC) technology for modeling the plasma in a tokamak fusion device. XGC can handle complex geometry including the X-point and the scrape-off edge region. The key computational kernels are electron particle push and modeling multi-species collision. We present performance and scalability results of porting XGC to take advantage of GPU acceleration on Summit.