Evaldas Juska (TAMU)

# 1. GEM FED bandwidth

- **Nick's simulation for ME0 occupancy**
  - 1 PU hit per layer per BX
  - 1.5 background hit per layer per BX
  - Rounding up to 3 VFAT packets per layer per BX
    - Can have a hit on the VFAT boundary = 2 VFATs readout
    - Not sure what is the exact probability of that…
  - One VFAT packet = 192 bits (have to double check with VFAT**3** spec)
  - 3 hits * 192bits * 750kHz L1A rate = 412Mbits/s
    - One CTP7 services 3 chambers * 6 layers = 18 OH
    - 422Mbits/s per layer * 18 = 7.2Gbs
    - **Very good number!**
    - **Ok for two 10Gbs Slink Express outputs from each CTP7**
- **GE1/1: based on Gille's flux plots we can expect ~10x less**
  - **Even having ~7x less than ME0 is still ok for AMC13 (2x safety factor)**
    - AMC13 data bandwidth = 24Gbs
    - If GE1/1 occupancy is 7x lower than ME0 the data bandwidth = 12Gbs
      - All 12 CTP7s combined
      - If we have two uTCA crates with 6 CTP7 each then it's even more comfortable