

# Summary of 8A-2

# Two different approach for medical application on GPGPU

- Koichi Murakami et. al.
  - Gamma ray therapy simulation coded by CUDA from the scratch
  - Necessary components and logics in Geant4 are translated into CUDA
- Julien Bert
  - hGATE = hybrid GATE (CPU+GPU)
  - Some parts of Geant4 are translated into CUDA
  - Track many particles in parallel

# Performance comparison

- Two groups reported that the speed up compared with Geant4 is large
  - Koichi had 33x speed up for gamma ray therapy simulation
  - hGATE claimed that they had x77 speed up for tomography simulation
    - It was pointed out that geometry definition in GATE may not be fully optimized
    - Because of the poor network connection, we are not able to discuss

# Future direction

- The both groups are intending to improve the performance and add more functionality
- More achievements are expected form the both group