Use of CUDA Profiling Tools Interface (CUPTI) for Profiling Asynchronous GPU Activity

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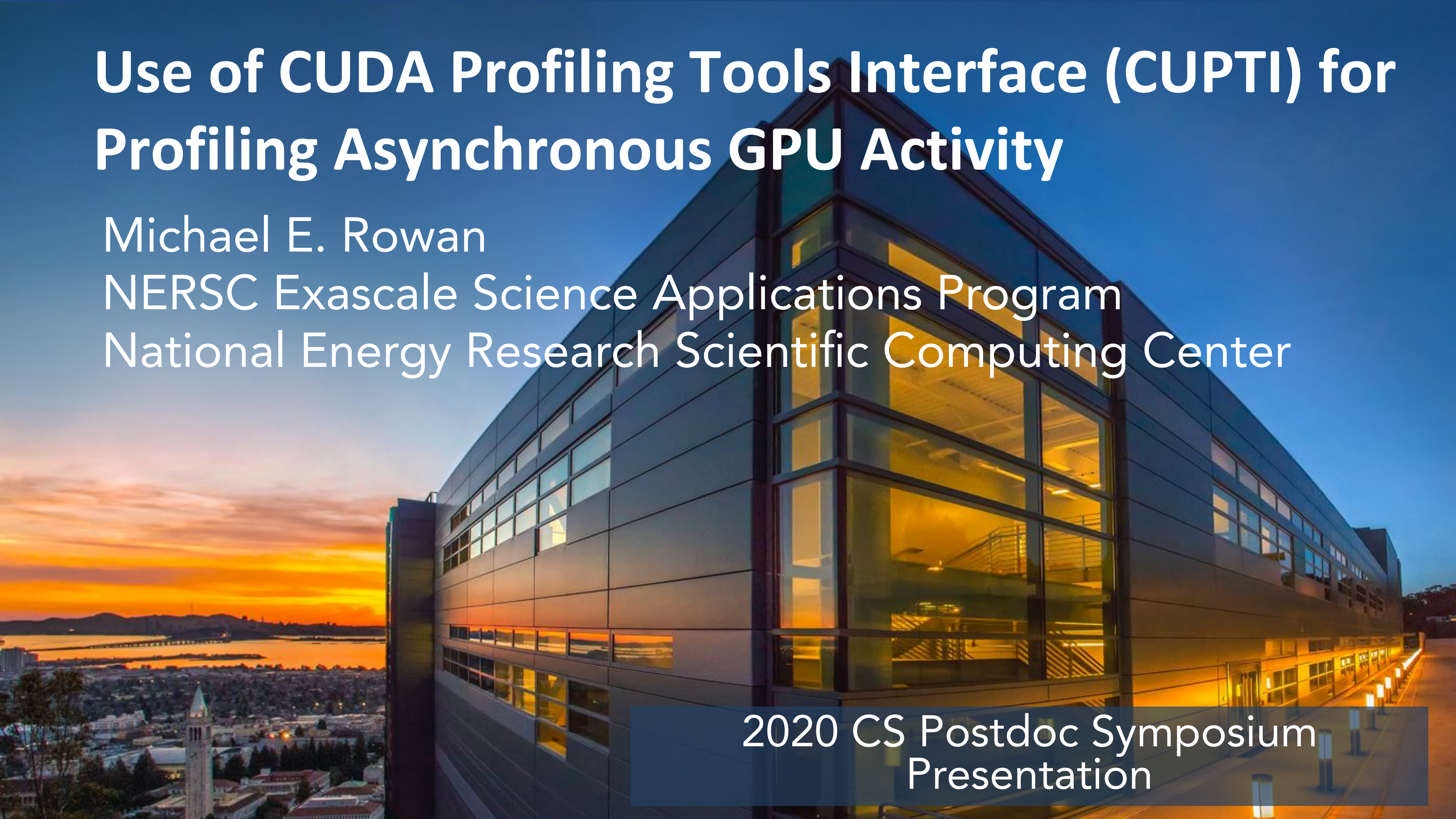

Real-time measurement of kernel execution time is needed for correct load balancing in GPU-accelerated codes

- On-the-fly measurement not possible with standard profiling tools (NVProf, Nsight)
- Developed a method (CUPTI Callback timing) for real-time measurement of kernel time
- Impact:
  - Provides accurate kernel timing **on-the-fly**
  - Enables correct **load balancing** in WarpX