roofline-tool-ERT

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1 工具获取

git clone https://bitbucket.org/berkeleylab/cs-roofline-toolkit.git

2 测试结果

2.1 GPU-Config

ERT_RESULTS Results.summit.ornl.gov.01

ERT_DRIVER   driver1
ERT_KERNEL   kernel1

ERT_GPU   True
ERT_GPU_CFLAGS   −x cu −arch=sm_80
ERT_GPU_LDFLAGS

ERT_FLOPS   1,4,16,64
ERT_ALIGN   32

ERT_CC   nvcc
ERT_CFLAGS   −O3 −std=c++11

ERT_LD   nvcc
ERT_LDFLAGS
ERT_LDLIBS

ERT_PRECISION FP16

ERT_RUN   ./ERT_CODE

ERT_BLOCKS_THREADS 163840

ERT_GPU_BLOCKS   80,160,320,640,1280,2560

ERT_GPU_THREADS   64,128,256,512,1024

ERT_NUM_EXPERIMENTS 5

ERT_MEMORY_MAX 1073741824

ERT_WORKING_SET_MIN 128

ERT_TRIALS_MIN 1

ERT_GNUPLOT gnuplot

NVIDIA GPU 架构对应代号

- Fermi (cuda 3.2-cuda8) sm_20

- Kepler（cuda 5 cuda 10）sm_30

- Maxwell（CUDA 6 CUDA 11）sm_50

- Pascal (CUDA 8 今) sm_60

- Volta (CUDA 9 今) sm_70

- Turing (CUDA 10 今) sm_75

- Ampere (CUDA 11 今) sm_80

参考链接：https:blog.csdn.netshaojie_wangarticledetails121117277
ERT_PRECISION: 精度可以选择 FP16,FP32,FP64

2.2 FP16 的 roofline

图 1: GPU-roofline-FP16

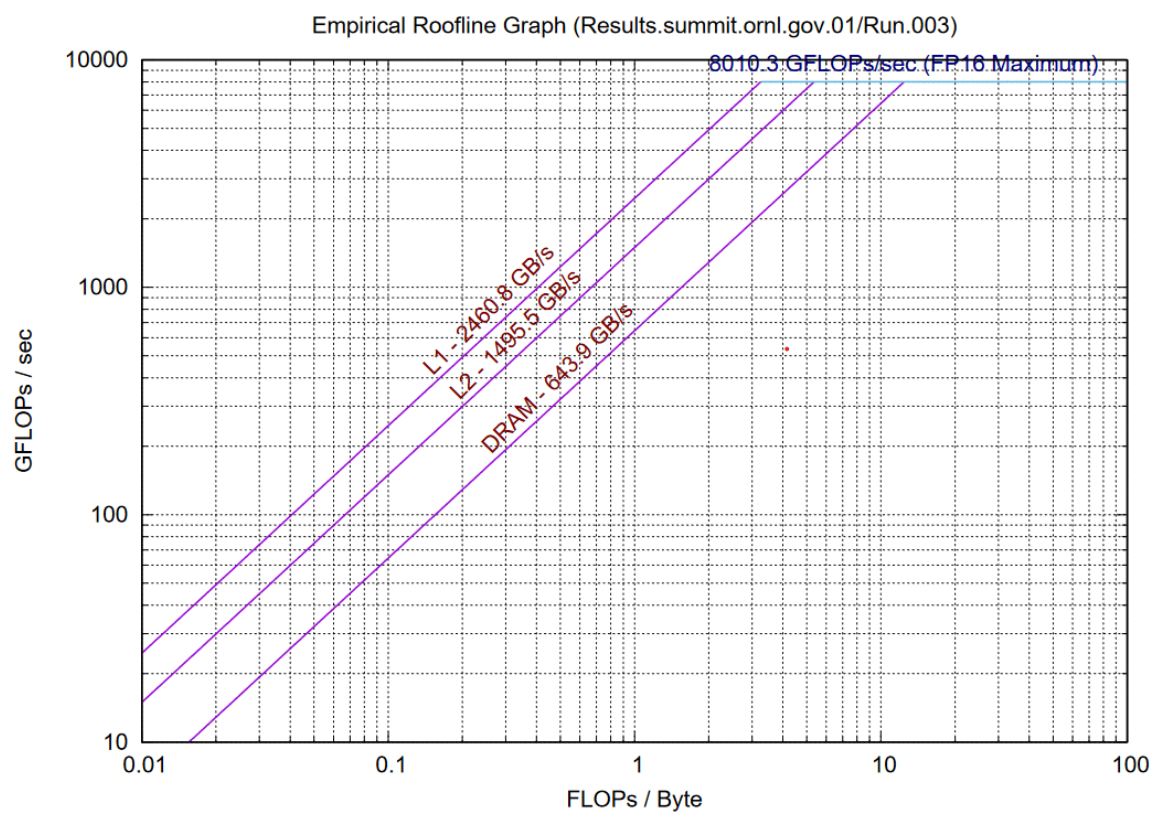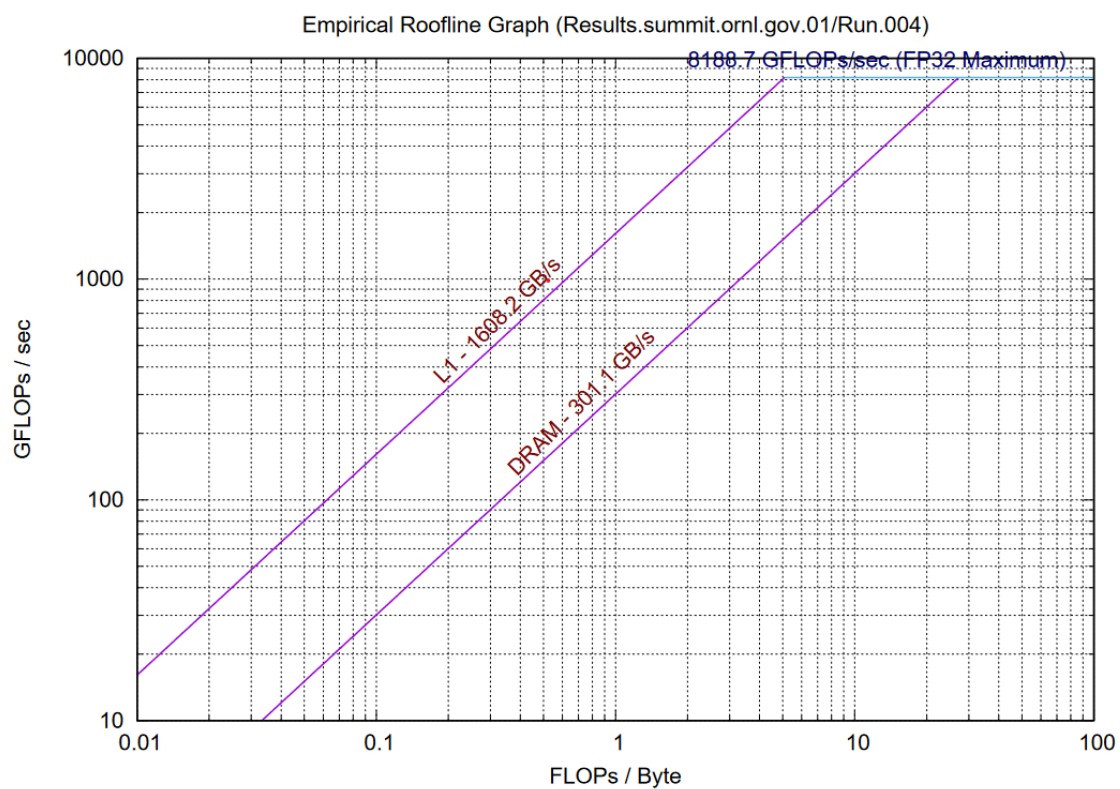## 2.3 FP32 的 roofline

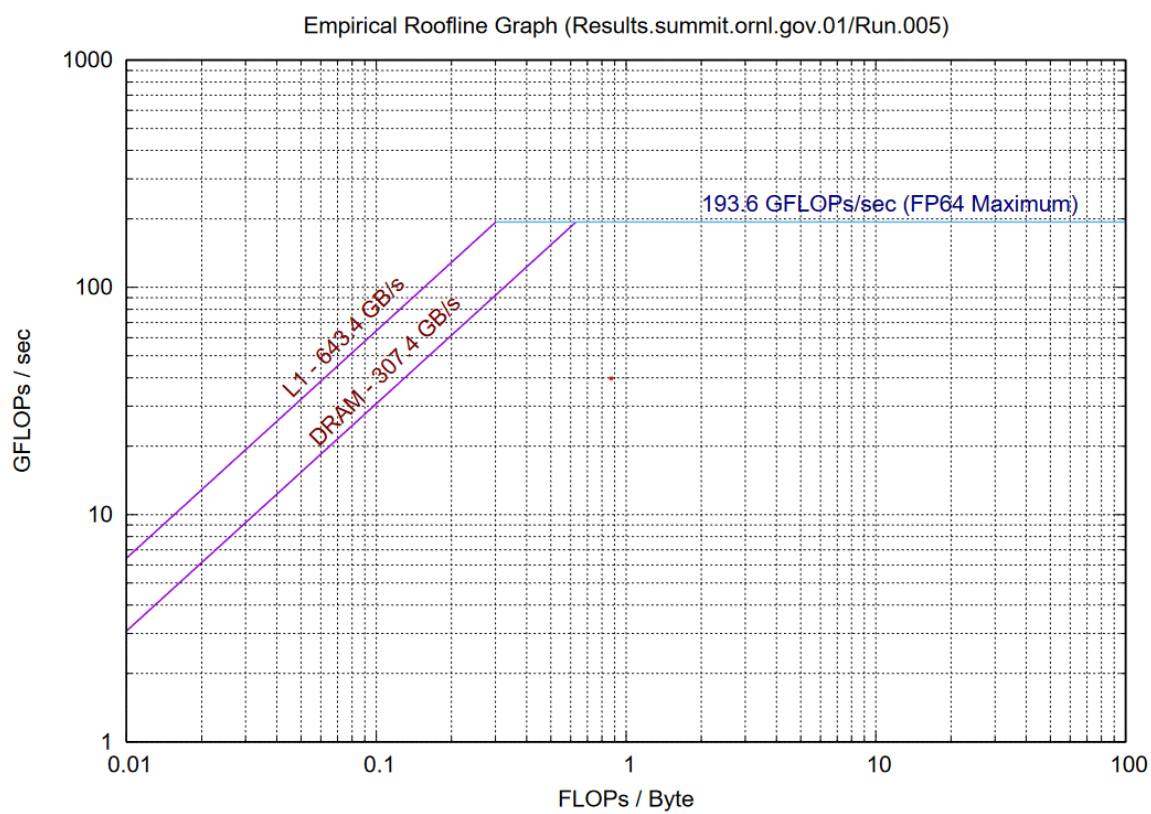图 2: GPU-roofline-FP32

2.4 FP64 的 roofline

图 3: GPU-roofline-FP64