

McStas McXtrace



Team



Peter Willendrup
DTU / ESS DMSC



Mads Bertelsen
ESS DMSC



Gregory S Tucker
ESS DMSC



Emmanuel Farhi
Synchrotron SOLEIL



Tobias Weber
Institut Laue-Langevin



José Robledo
FZ Jülich / IAS / JSC

Team Mentors



Jan-Oliver Mirus
FZ Jülich / IAS / JSC

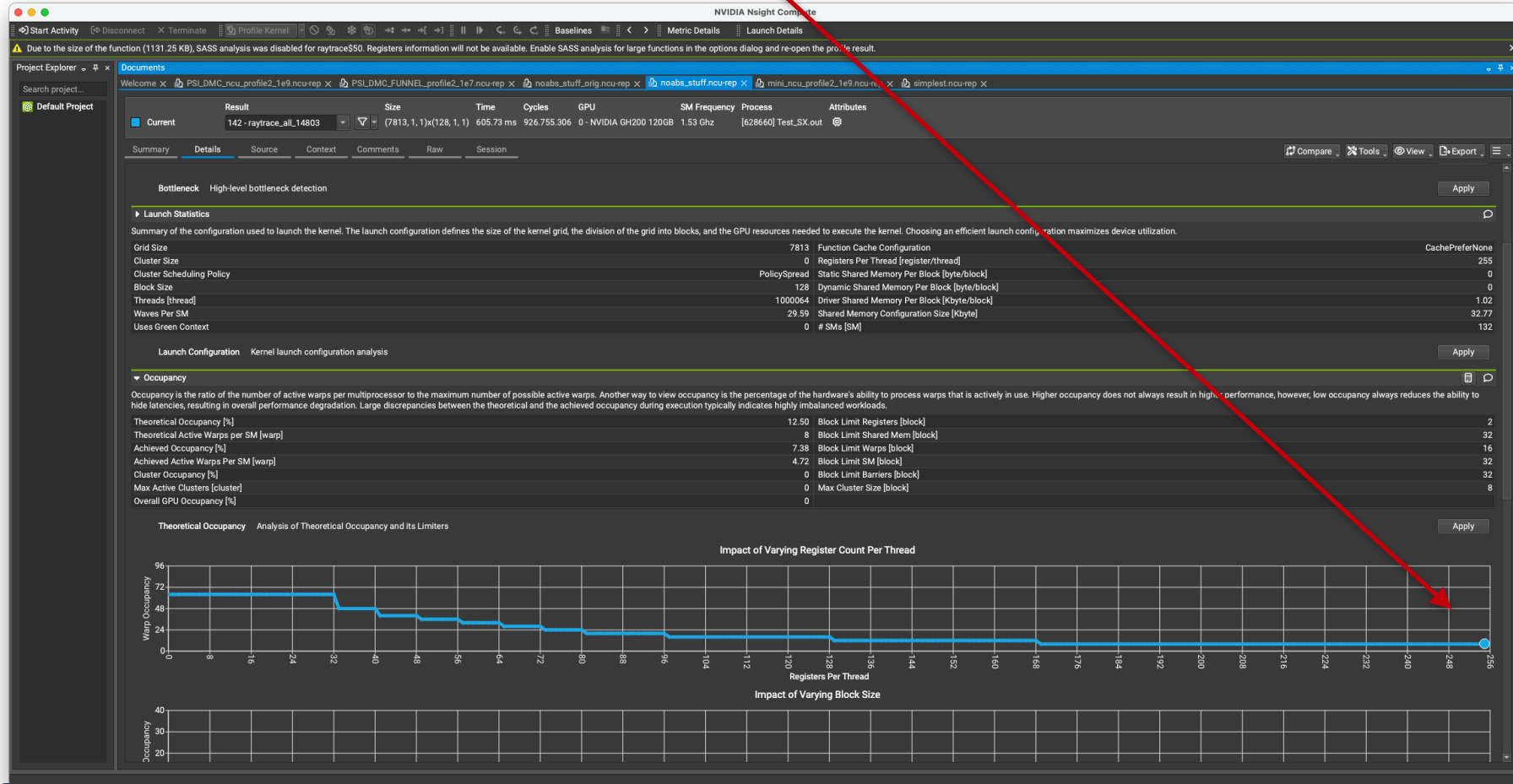


Ilya Zhukov
FZ Jülich / IAS / JSC

Profiler Output

We are likely blocked by our “arrays of struct”

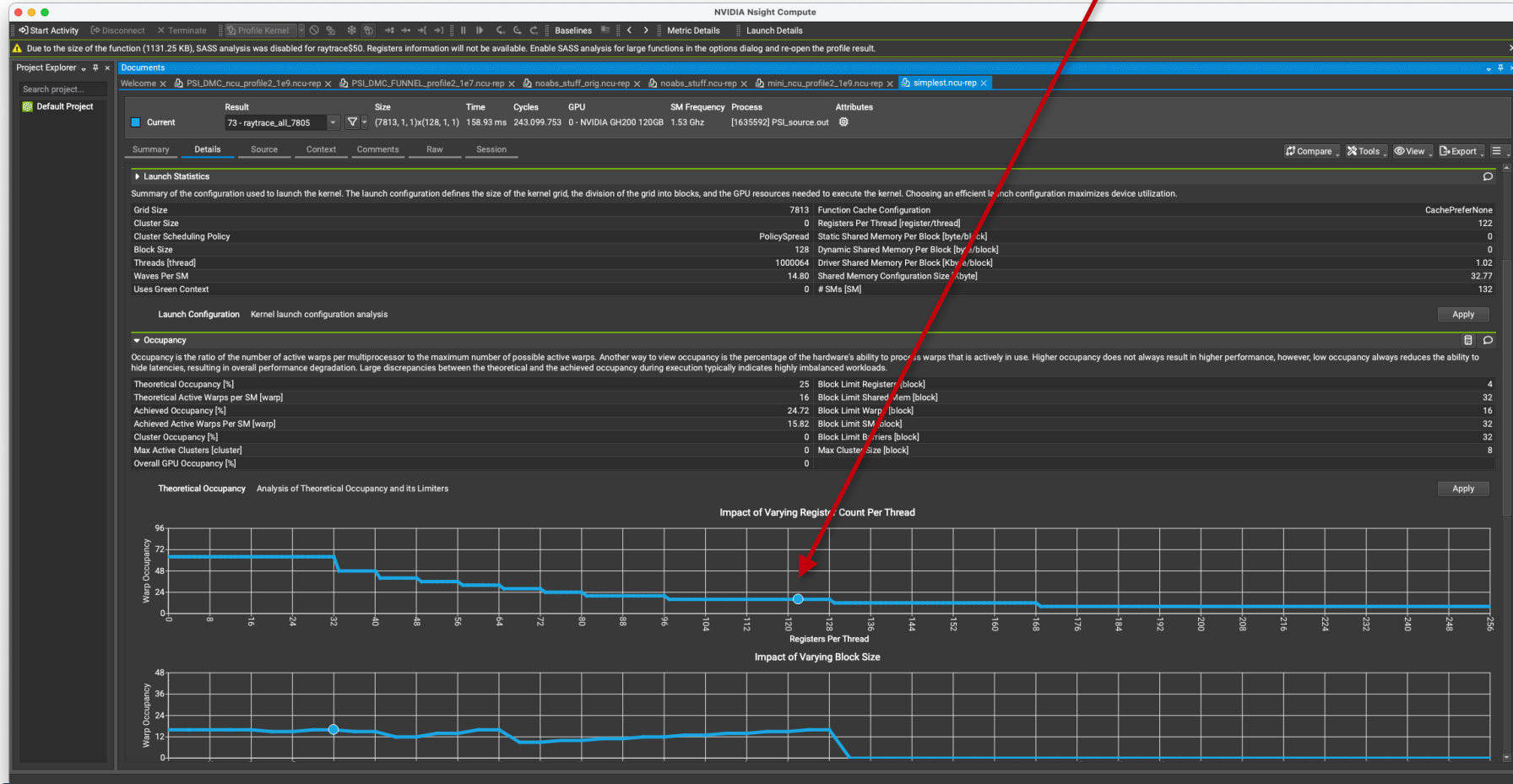
- Too many registers required pr. thread



Profiler Output

We are likely blocked by our “arrays of struct”


- Even the ‘simplest of all cases’ is not great in this respect




Progress and Goals

- Tobias identified and corrected a thread race condition in a specific instrument / component
- Emmanuel tried chatbot hints for potential missing #pragma's in key component codes... “Not so easy” ;-)
- Goals for today:
 - More profiling
 - Experiments with ‘struct with arrays’ approach
 - Limit device-host-device transfers (only some data need to be loaded back to host)
 - Take a look at alternative FUNNEL sorting algorithm (something readily provided in CUDA?)


Fixed race condition in resolution calculation #1929





 Merged willend merged 4 commits into [Helmholtz-hackathon-2025](#) from [hackathon25-tobias](#) 2 minutes ago


Conversation 0 Commits 4 Checks 44 Files changed 3

 **tweber-III** commented 2 minutes ago Member

No description provided.

 **tweber-III** added 4 commits 1 hour ago

-  Update cov-lib.h Verified ✓ 98bddab
-  cov-lib: a) changed linked list to arrays; b) added checks Verified ✓ bd8a351
-  Res_monitor.comp: fixed race condition Verified ✗ 198427e
-  Res_monitor.comp: showing number of events Verified ● 3dc5e24

 **willend** merged commit **5967238** into [Helmholtz-hackathon-2025](#) 2 minutes ago
3 of 44 checks passed View details Revert

Problems and Solutions

- Refactoring to try out a new overall code structure is challenging
 - Hack local c-file is error prone vs. lots of work needed to 'fully integrate'
 - Limit device-host-device transfers
(only some data need to be loaded back to host)