



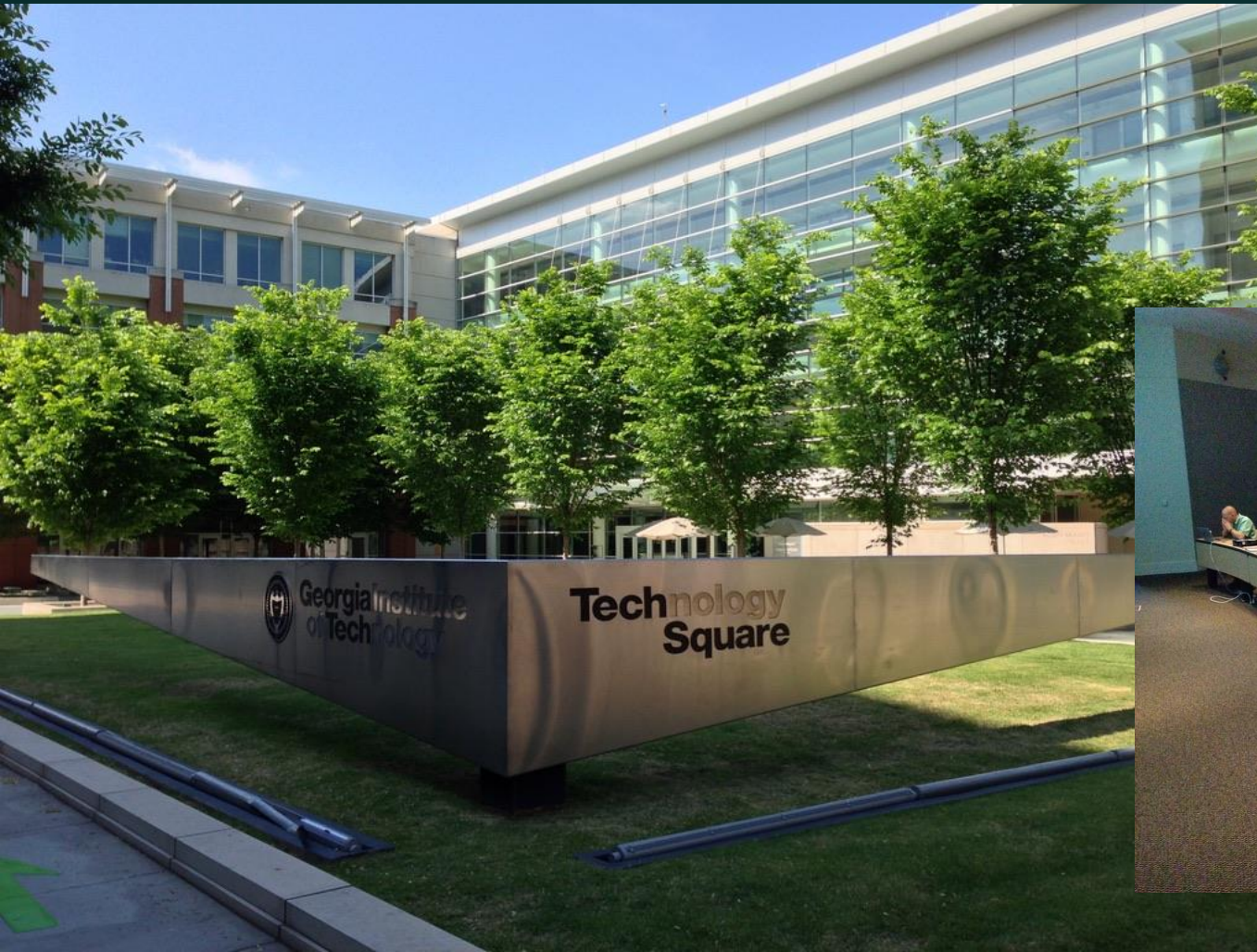
**IWOCL
SYCLcon**

IWOCL and SYCLcon 23



**Prof. Simon McIntosh-Smith
University of Bristol
General Chair**

The first IWOCCL was organized in a rush...



Georgia Tech, May 14th 2013
40 attendees, 11 speakers





Bristol 2014



Stanford 2015



**Vienna
2016**



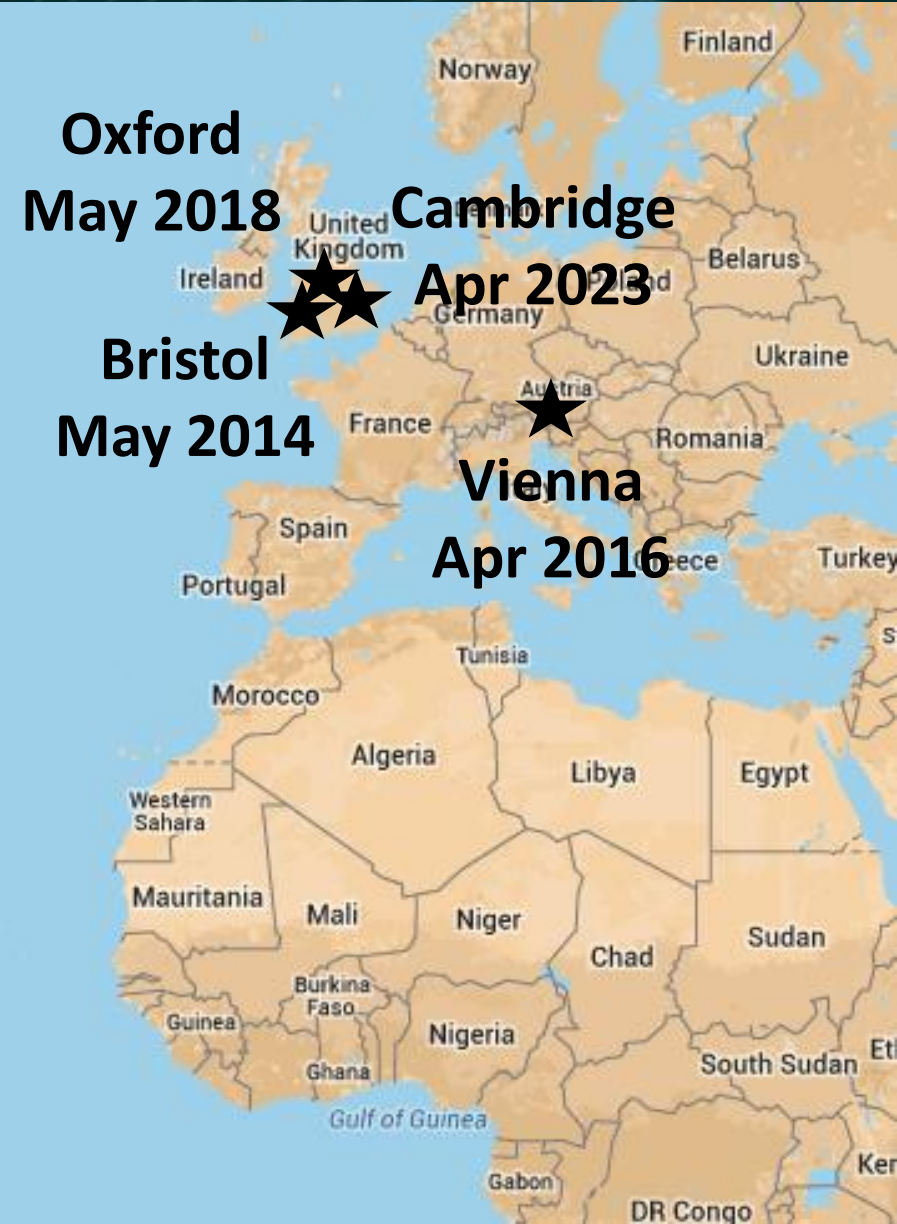
Toronto 2017



Oxford 2018



Boston 2019



Some IWOCL / SYCLcon statistics so far...

Over 960 total
delegates

241 accepted
submissions

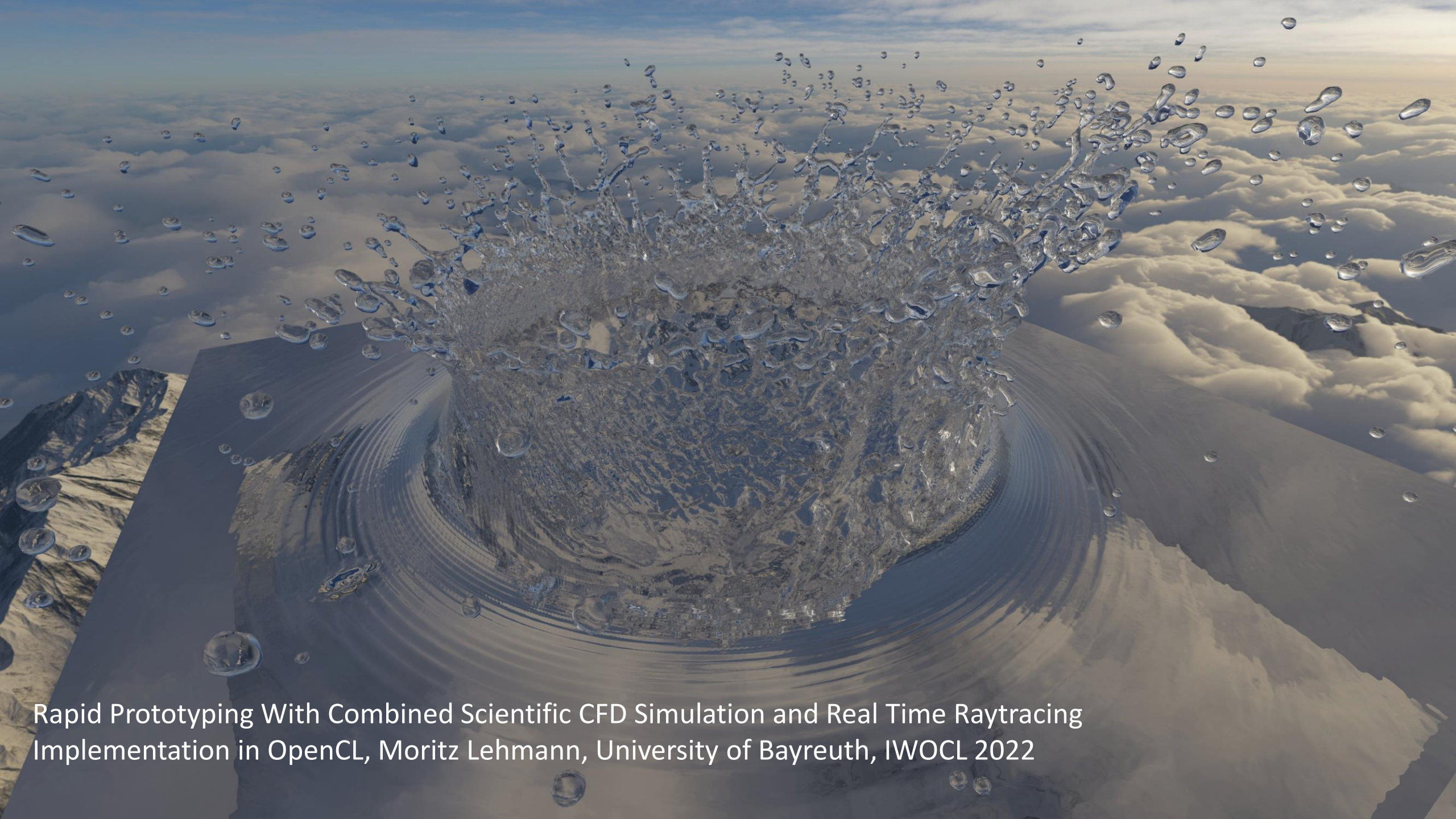
36,748 downloads,
685 citations and
counting...
(dl.acm.org)

Cool disclosures at IWOCL / SYCLcon

- **New versions** of the SYCL and OpenCL standards
- **New tools** such as OCLgrind, profilers, debuggers, ...
- **New uses of the standards:** C++ AMP on OpenCL, ported applications such as GROMACS, optimized math libraries, machine learning frameworks, Boost, medical imaging, interactive ray-tracing, autonomous vehicles, drug discovery pipelines, safety critical implementations, ...
- **Best practice** for using the standards across CPUs, GPUs, FPGAs and other accelerators



NanoSimBox, IWOCL 2015

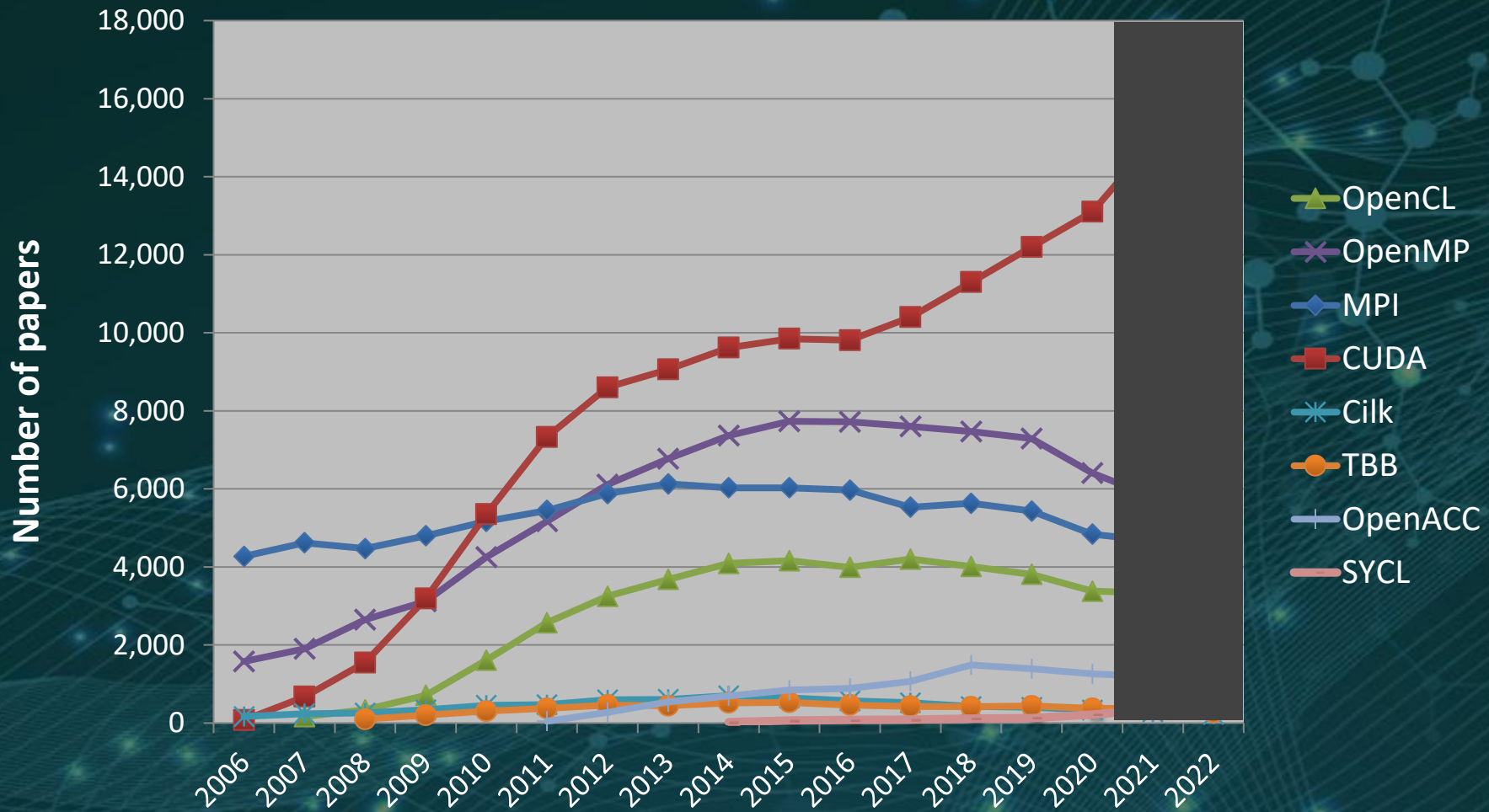


Rapid Prototyping With Combined Scientific CFD Simulation and Real Time Raytracing
Implementation in OpenCL, Moritz Lehmann, University of Bayreuth, IWOCCL 2022

OpenCL and SYCL mentions in academic papers

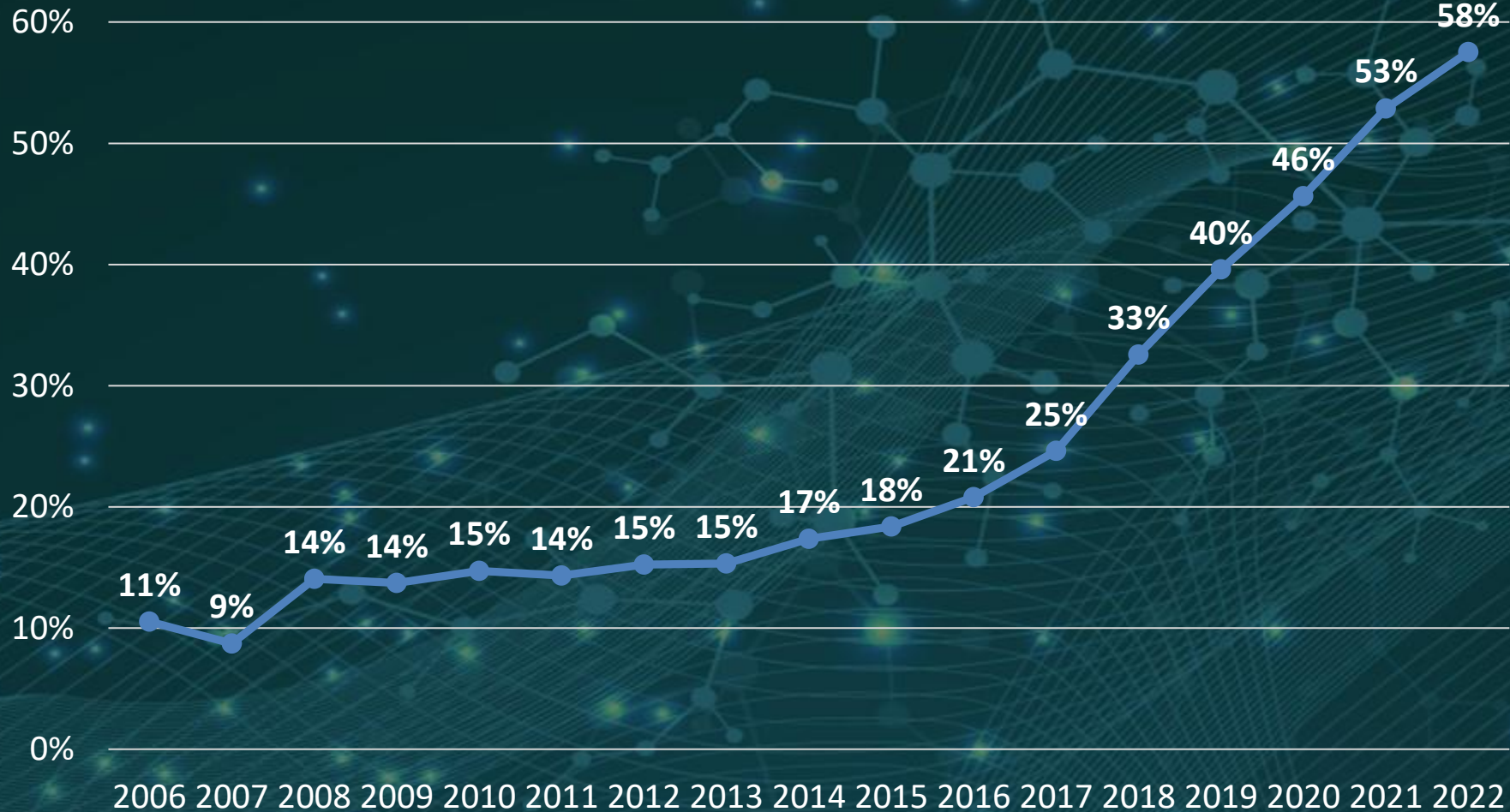


Papers mentioning parallel programming languages. Data according to Google Scholar (April 18th 2023)



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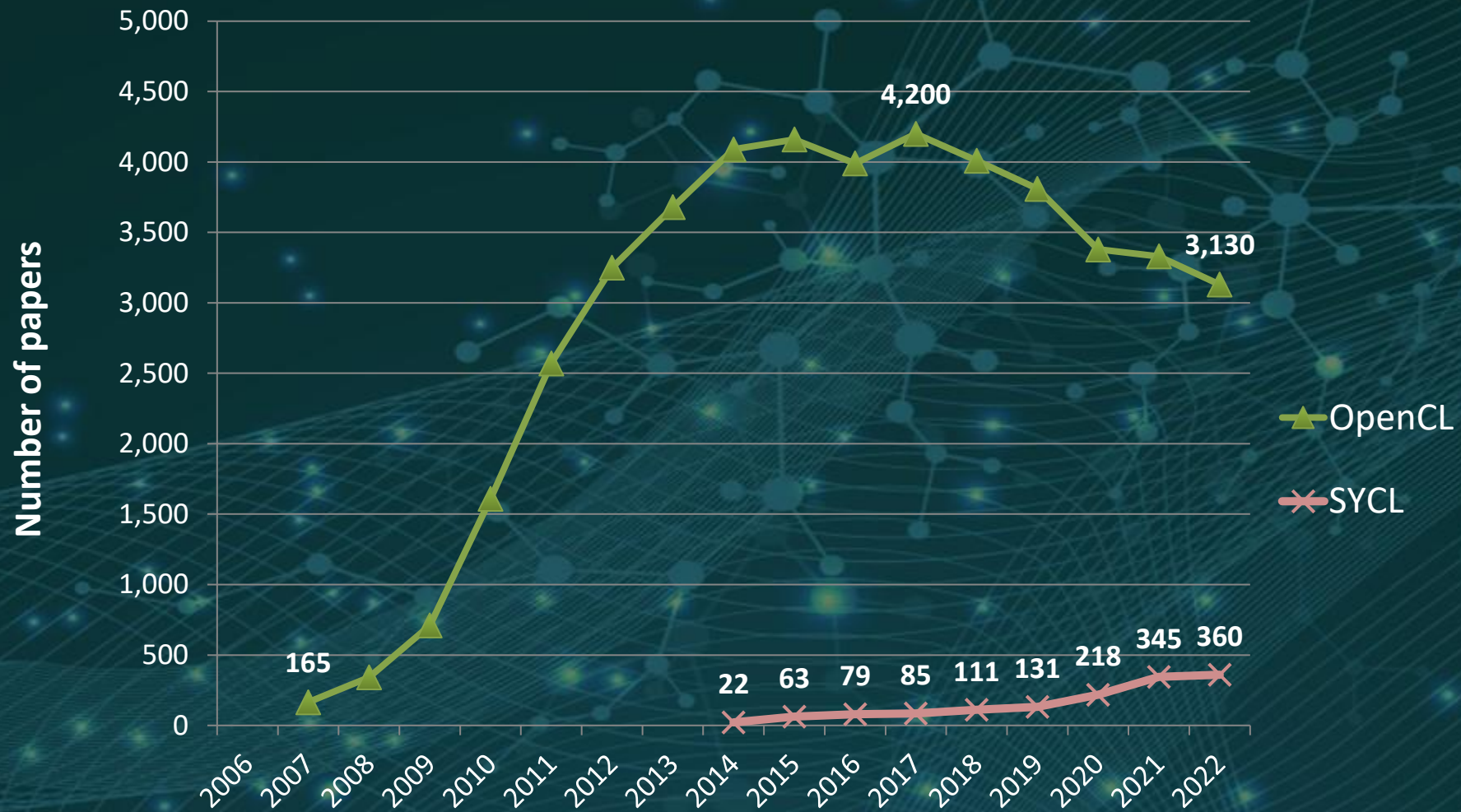
CUDA % papers mentioning AI



3x in
6 years

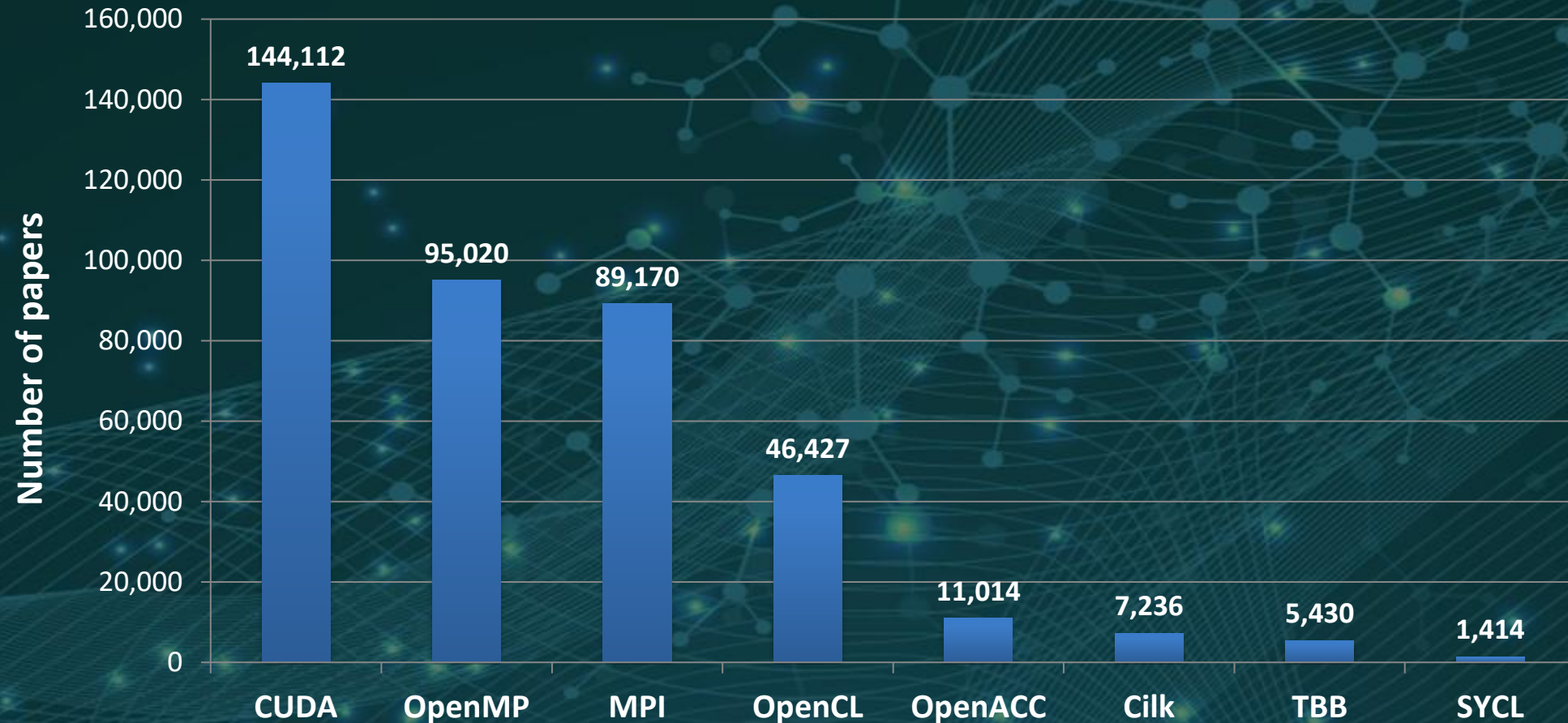
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Papers mentioning parallel programming languages. Data according to Google Scholar (April 18th 2023)



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**Cumulative papers mentioning parallel programming languages.
Data according to Google Scholar (April 18th 2023)**



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<https://uob-hpc.github.io>

IWOCL / SYCLcon has an exciting future!

- Many more advances still to come
- Heterogeneous computing is becoming ubiquitous
 - Has been for some time in embedded computing
 - In HPC, most Exascale supercomputers will be CPU+GPU
- More heterogeneity – lots of different accelerators!
- SYCL growing rapidly and being adopted in AI, autonomous vehicles, safety critical systems etc.
- Other open computing standards becoming increasingly important, e.g. ISO C++ standard parallelism etc.



IWOCL & SYCLcon

For more information:

IWOCL / SYCLcon: <https://www.iwocl.org/>

Khronos OpenCL: <https://www.khronos.org/opencl/>

Bristol HPC group: <https://uob-hpc.github.io/>

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