



Strategy to Support Quantum Industry Players in Europe

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Building the shared classical layer for scalable quantum computing
TQCI SIAQ Seminar, Paris, 23 September 2026



Quantum Computing's Broad Impact

Potential impact across industry and science



EV chemistry



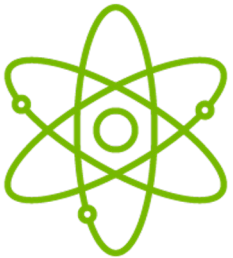
Drug discovery



Logistics



Finance



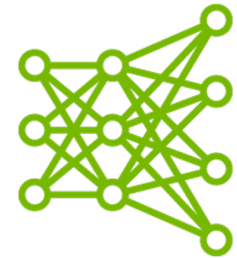
Physics modelling



Materials



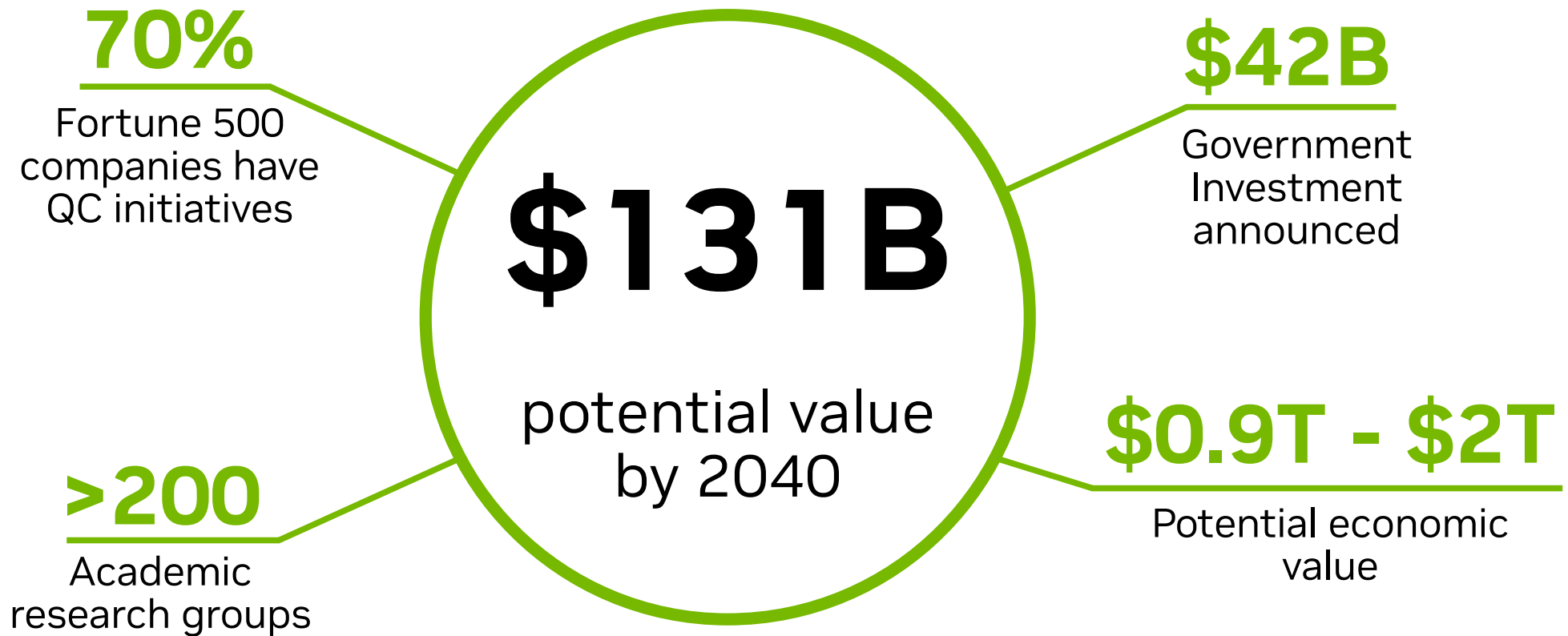
Nitrogen fixation



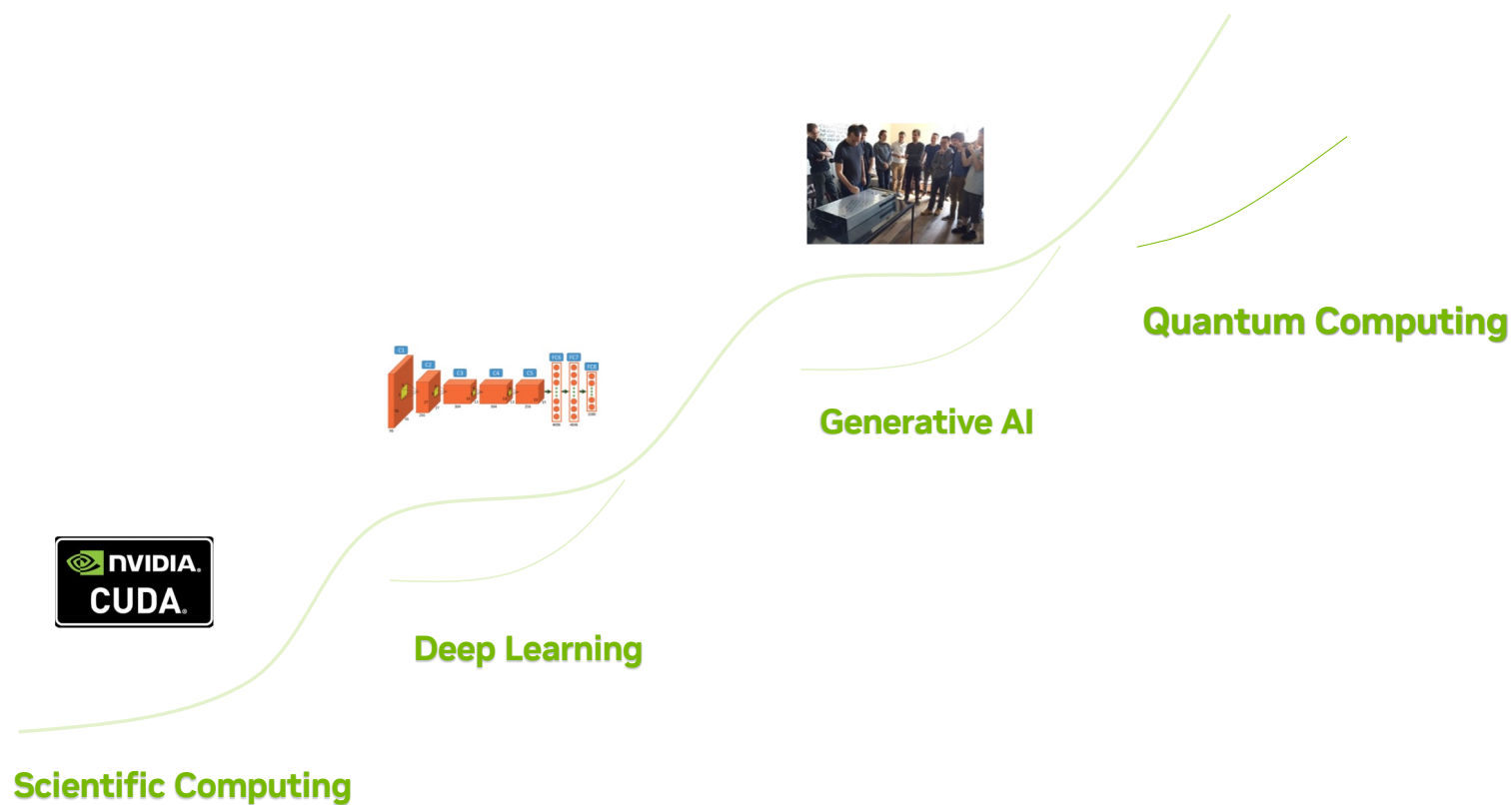
AI and ML

The Quantum Market Forecast

Research, investment and long-term economic potential

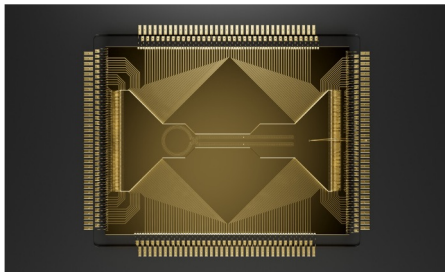


Quantum computing is the next accelerated workload

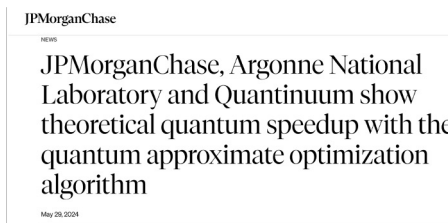
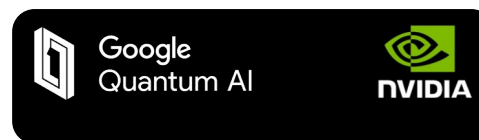
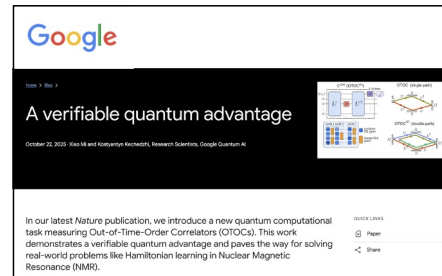


Recent progress across the quantum stack

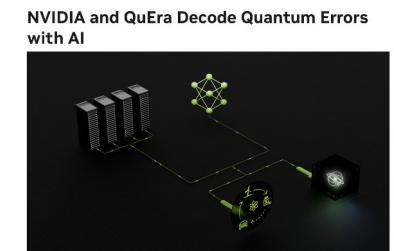
Quantum hardware



Quantum applications



AI for quantum systems



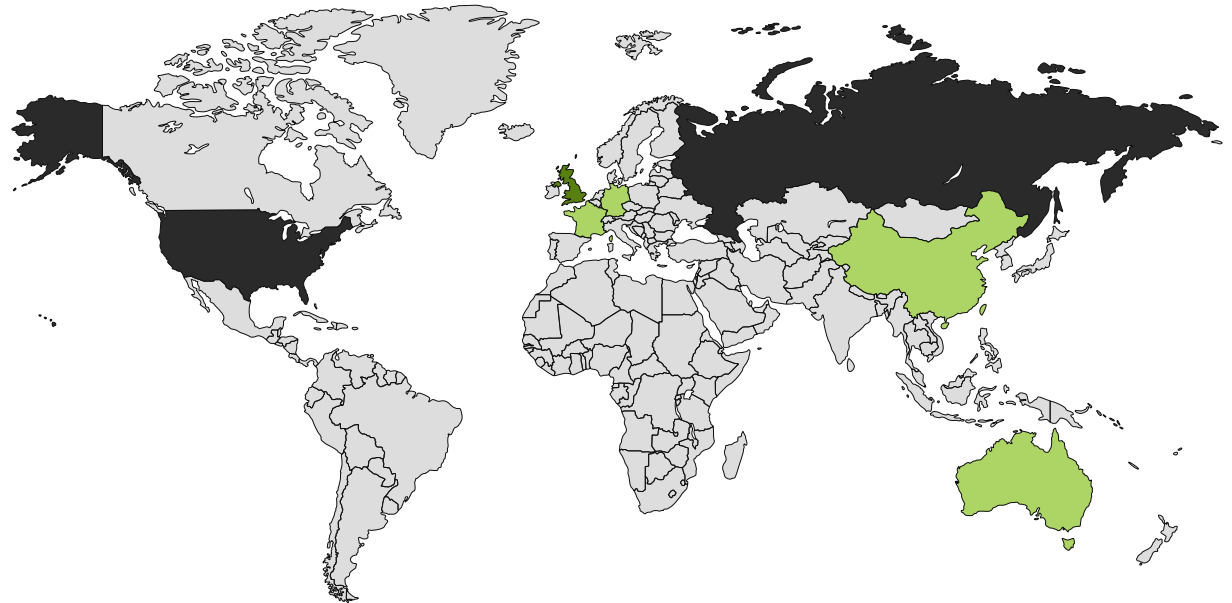
Government investment is expanding worldwide

National programmes are building technology, infrastructure and skills

>\$55B world-wide

25+ National quantum initiatives

- China estimated **\$10-\$20B**
- Australia **~\$1B**
- Germany **~\$3B**
- France **~\$2B**
- United Kingdom **~\$56M**



What Europe's quantum ecosystem needs to scale

A shared hybrid computing layer can connect Europe's hardware, infrastructure and application strengths

QPU companies

Integrate with HPC centres
Test, benchmark and reach buyers

HPC facilities

Orchestrate CPU, GPU and QPU workloads
Operate securely through common interfaces

Shared hybrid computing infrastructure

Common software and infrastructure connecting Europe's QPUs, supercomputers and applications

Research centres

Access multiple QPU technologies
Share reproducible hybrid workflows

Application developers

Use hardware-agnostic tools
Co-design applications on real systems

Governments

Coordinate funding and procurement
Grow scale-up capital, skills and supply chains

EuroHPC is connecting six quantum computers with six European supercomputers

NVIDIA's Vision for Quantum-GPU Supercomputing

Connect

Integrate quantum hardware with AI supercomputers

Develop

Build hardware-agnostic hybrid applications using GPUs and QPUs

Scale

Accelerate simulation, control and error-correction workloads on GPUs



NVIDIA Accelerates Quantum

Access to accelerated computing across the quantum ecosystem

QPU vendors

App developers

Academics

Industry

NVIDIA Quantum

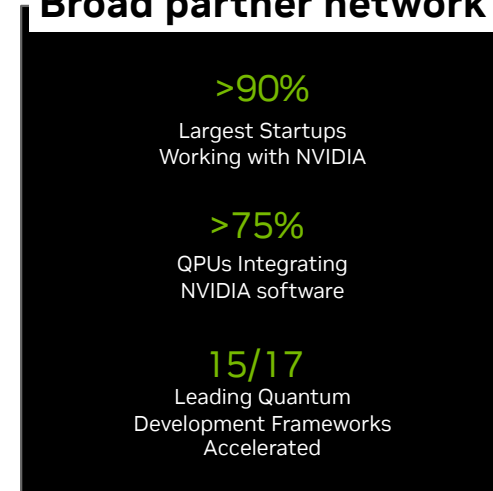
Qubit agnostic



Proven to scale



Broad partner network



The NVIDIA Quantum Platform

A common software stack from simulation to low-latency QPU integration

CUDA-QEC and CUDA-Q Solvers

Turnkey Quantum Research and Application Development

CUDA-Q

Open-Source Software Platform for Accelerated Quantum Supercomputers

cuQuantum

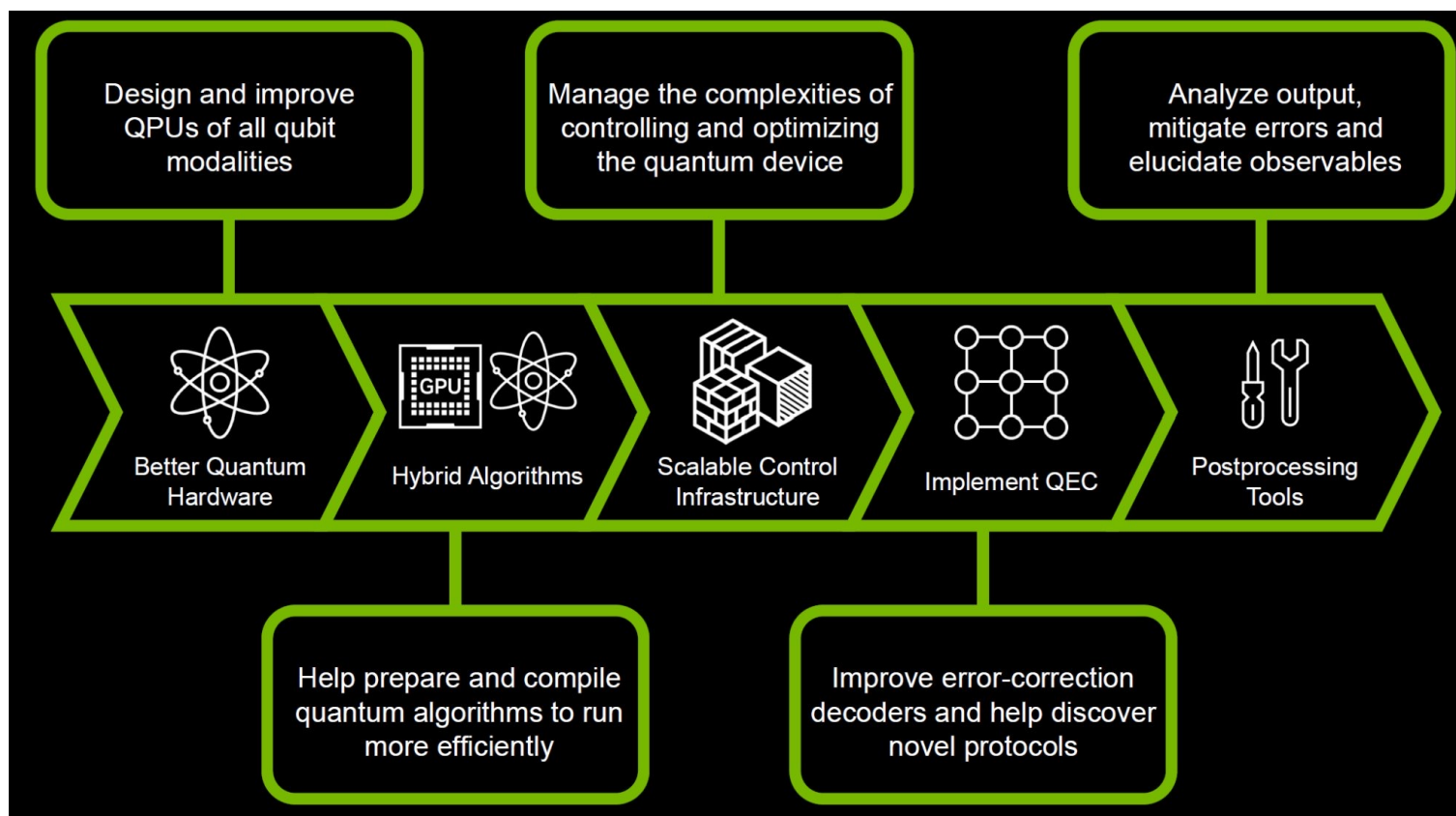
Accelerated Quantum Simulation/Emulation on GPU

NVQLink

Reference Architecture for Low Latency Integration

AI supports the full quantum computing stack

[arXiv:2411.09131](https://arxiv.org/abs/2411.09131)

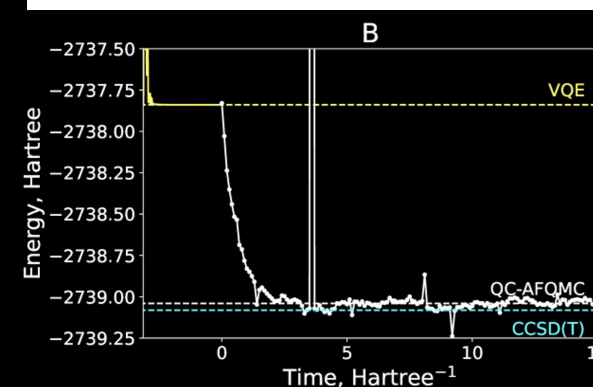
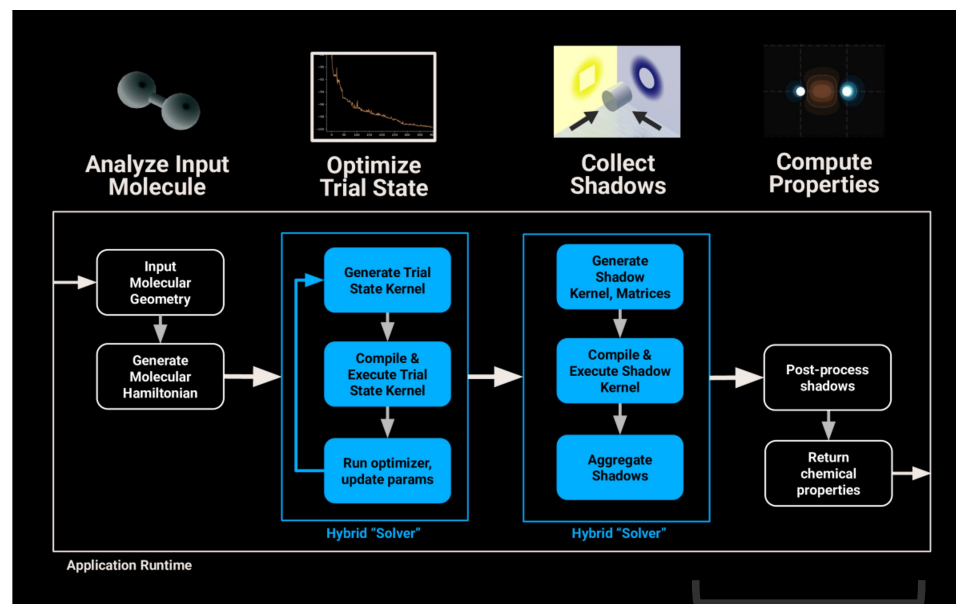


Quantum-GPU Computing for Medicinal Chemistry

656×

faster time to solution
than the previous state of the art

- Hybrid workflow for chemical reaction barriers
- 20-qubit trial state on IonQ Forte
- 320 H200 GPUs on AWS for post-processing



QPU execution:
300,983 circuits
3.8 days (IonQ Forte)

GPU post-processing:
179,858 shadows
13,200 GPU-hours (H200)

arXiv:2506.22408v1

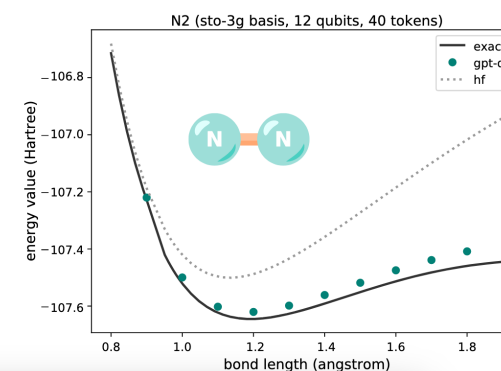
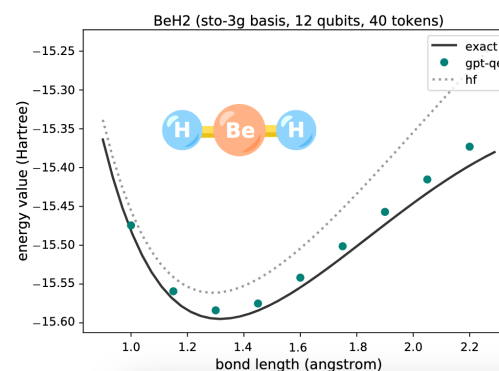
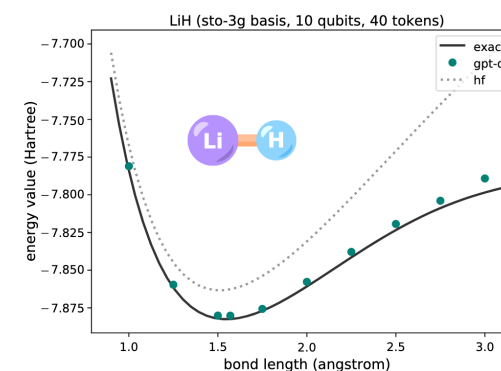
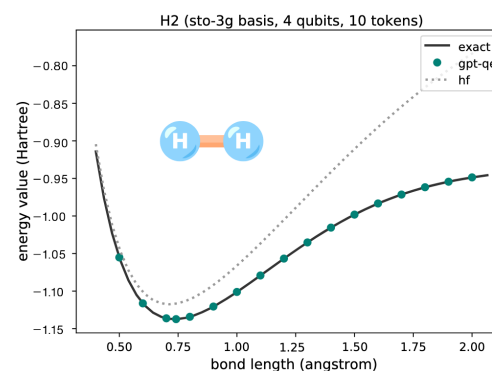
AI-generated circuits approximate molecular ground states

GTP-QE used to generate circuits producing a molecular ground state

Generative AI proposes quantum circuits for ground-state search

CUDA-Q execution on A100 GPUs at the Perlmutter supercomputer

Potential applications include drug discovery and materials science



<https://arxiv.org/pdf/2401.09253.pdf>



**Europe can scale quantum by connecting QPUs,
supercomputers and applications**

Thank you

Questions and discussion

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