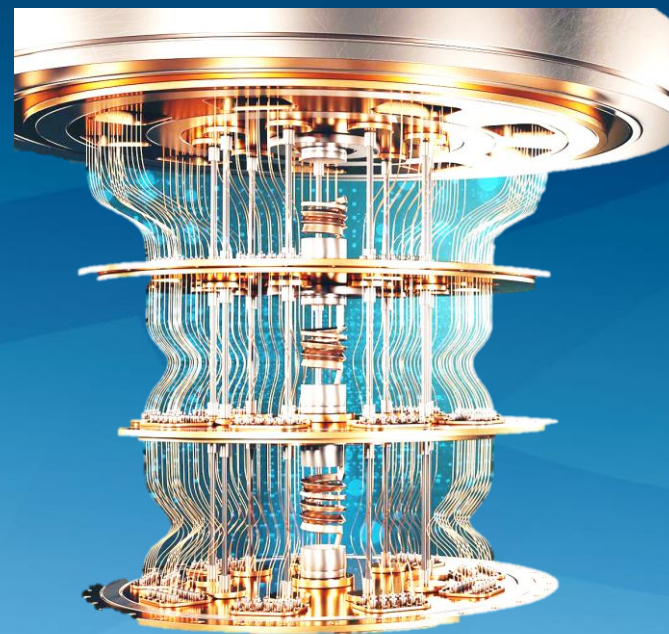


---

 **Quantum:**  
*Erste's activities*

---



**Filippo Fratini**

Quantum Austria, 3rd Networking Meeting | 5 March 2025

# Two streams

Quantum  
advantage

Quantum  
Threat

# Two streams

Quantum  
advantage

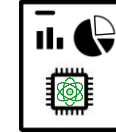
Quantum  
Threat

# Our goals :

○ find banking use-cases where quantum can be usefully applied



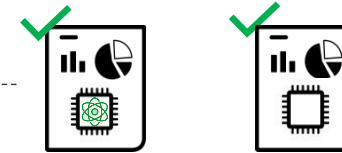
○ concretely build those quantum use-cases



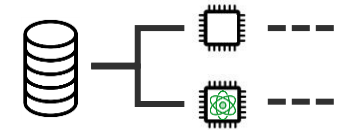
○ use, not only toy data, but also real data



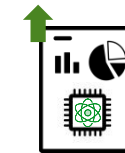
○ obtain results that are comparable with classical computation



○ set quantum solution side-by-side with the classical one

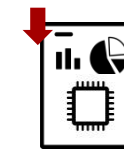


○ { get business value today (nice to have)



or

○ { get a perspective when quantum will bring business value (need to have)



# Quantum in Erste Group Bank

➤ Erste QuanTeam brought three quantum solutions to life (more on the way!):

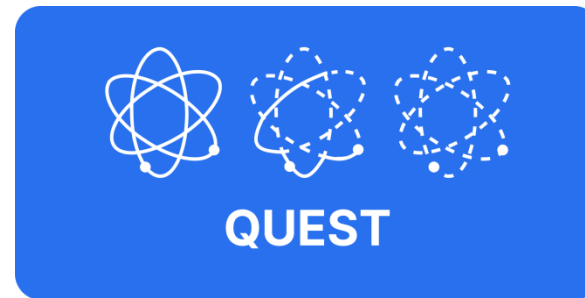
1



Emission Allocation Realized  
Through QUANTUM Kernel

*(Quantum green asset and customer screening)*

2



QUANTUM Elimination  
and Selection Transformer

*(Quantum solution for Data Science and Machine Learning)*

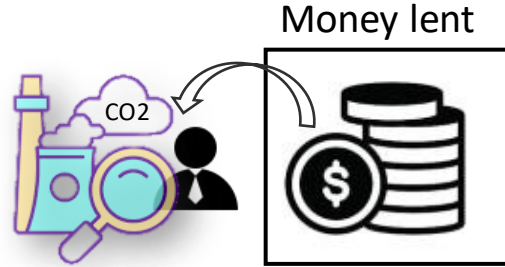
3



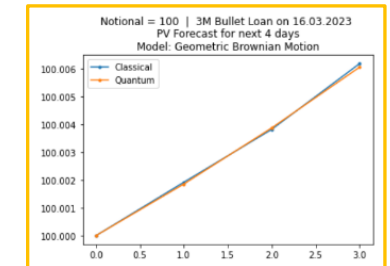
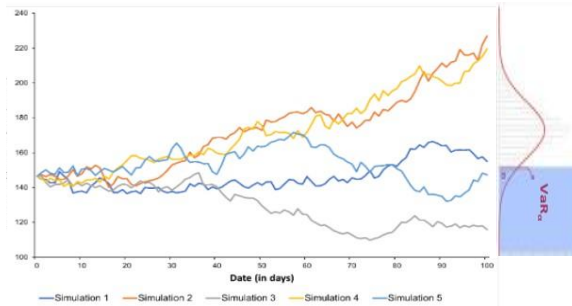
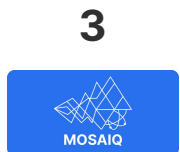
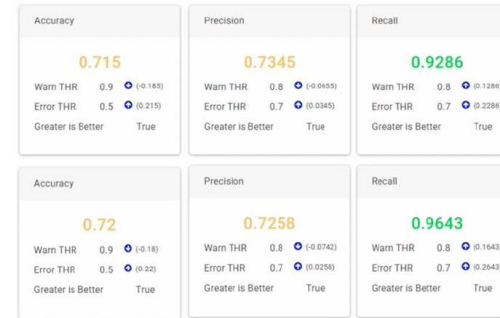
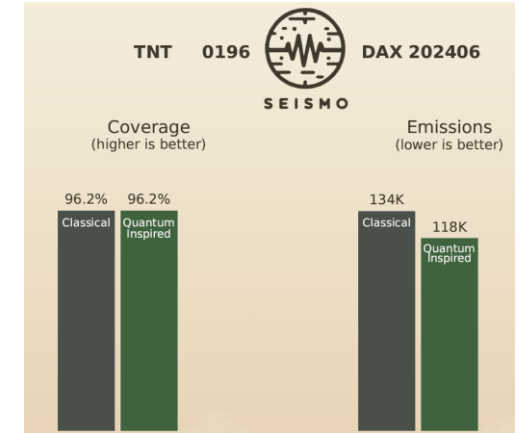
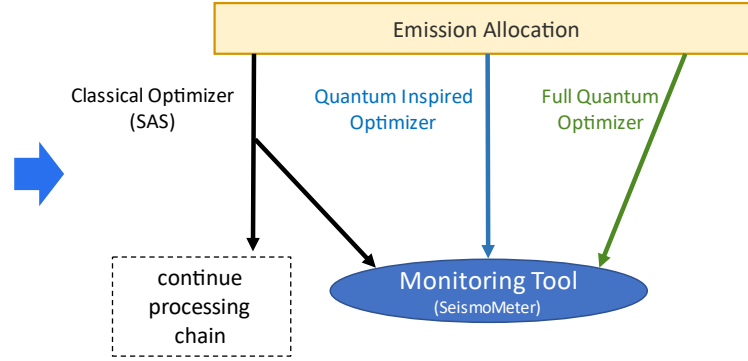
MONTE-carlo  
Simulations Administered  
In QUANTUM

*(Quantum Monte-Carlo simulations for interest rates and asset prices)*

# Quantum in Erste Group Bank



→ Optimization algorithm



# Two streams

Quantum  
advantage

Quantum  
Threat

# Two streams

Quantum  
advantage

# Quantum Threat

- Jan 2025: Top Management interest
- Feb 2025: Planning started

**PQC**

two  
substreams

**QKD**

- project started Sep 2024
- External telecom provider
- protected by NDA

Coming law enforcement  
NIST, DORA, CNSA2, ...



Classical  
- vs -  
Quantum

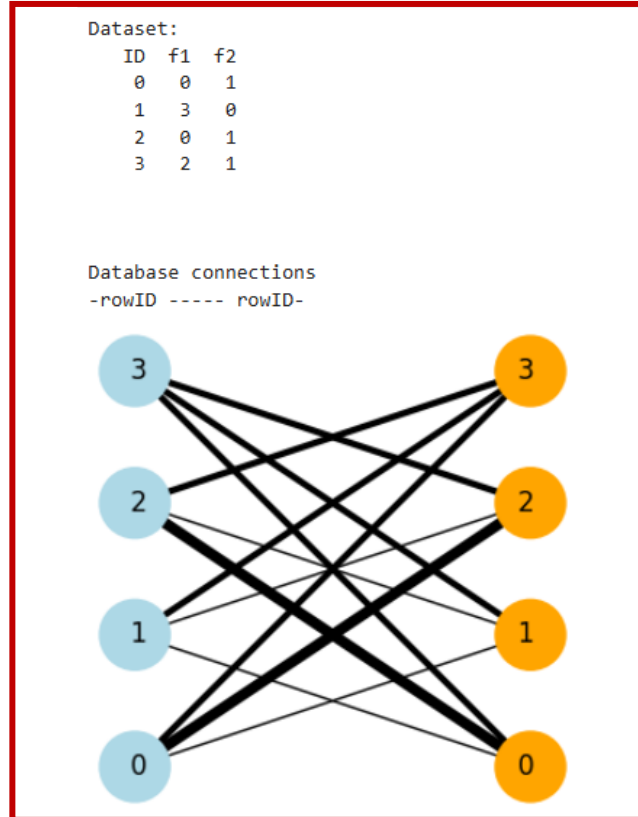
Quantum  
- vs -  
Quantum



Research /  
speculative

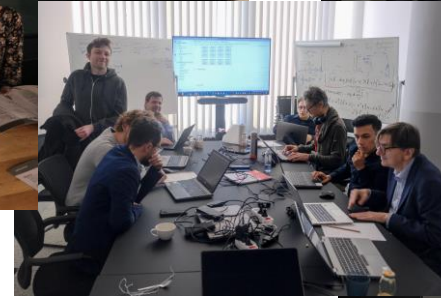
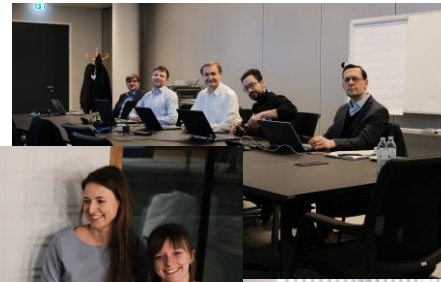
# Oncoming projects:

Example:



*Unsupervised Learning  
(PoC)*

A product of



IBM Quantum

Thanks for your  
attention.