ABSTRACT
Pushing quantum systems beyond current limitations necessitates significant advancements in fidelity, scalability, and the reduction of experimental overhead. The Qblox Cluster system offers a comprehensive solution to these challenges through its fully integrated, time-efficient, and ultra-low-noise control stack.
Qblox's mission is to bridge classical computing and quantum systems by providing robust hardware and open-source software for the control and readout of various qubit platforms. Its modular architecture enables the Qblox Cluster to be seamlessly configured for superconducting qubits, semiconductor spin qubits, and color centers. For each platform, Qblox delivers specialized capabilities designed to accelerate fundamental research and efficiently support High-Performance Computing (HPC) centers.
This talk will delve into Qblox technology, demonstrating its versatility in configuring diverse experimental setups.

BIO BILAL KALYONCU
Bilal Kalyoncu is an experimental physicist and spends efforts in bringing quantum computers to reality. As the lead application scientist of Qblox, he is specifically keen on understanding the requirements of qubit control and readout, and on matching them with Qblox's solutions. He started his studies at Bogazici university, Turkey and completed his PhD in experimental solid state physics at the University of Basel, Switzerland. He patented two applications in nanomagnetism and has experience in nanofabrication, quantum transport in 2D materials and cryogenic methods. After his PhD, he started his professional career in the scientific instruments industry to find solutions to challenging problems of experimental physics.

BIO GIACOMO PISCIA
Giacomo Piscia, a theoretical physicist specializing in quantum information and control, received his education at the University of Milan, where his studies concentrated on classical simulations of quantum systems and machine learning methodologies. In his current role as a Quantum Sales Engineer at Qblox, he is responsible for bridging the gap between research institutions in South Europe and the Middle East and industrial quantum research solutions.