

## DISCOVER Expedition Status

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**Abstract**—The DISCOVER (Design & Integration of Superconductive Computation for Ventures beyond Exascale Realization) Expedition mission is to explore novel superconductor electronics as a viable post-CMOS computing technology. The goal is to build a fully operational SuperSoCC, a system composed of superconductor electronic compute cores and memory, running together to execute applications at scale. Now entering its fourth year, the DISCOVER team includes seven universities and is centered at the University of Southern California (USC). The dispersed team must effectively combine new technologies, circuits, architectures, interfaces, and design methodologies into an important demonstration vehicle. This status report will focus on updates to the qPALACE v2 suite of EDA tools.

**Keywords (Index Terms)**—Josephson Devices, Josephson Junction, Kinetic Inductance, Nanofabrication, Neuromorphic computing, Thin Films/Multilayers

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