
Evolvable hardware is a developing field that applies artificial evolution and related algorithms to the automation of design, optimization, and adaptation of physical structures such as electronic systems, antennas, MEMS, and robotics. The purpose of this conference is to bring together leading researchers and developers from the evolvable hardware community, representatives of the automated design and programmable/reconfigurable hardware communities, technology developers, and end users from the aerospace, military, and commercial sectors.

Evolvable hardware techniques enable self-reconfigurability, adaptability, and learning by programmable devices and thus have the potential to significantly increase the functionality of deployable hardware systems. Evolvable hardware is expected to have a major impact on deployable systems for space systems and defense applications that need to survive and perform at optimal functionality during long duration in unknown, harsh, and/or changing environments. It is also expected to greatly enhance the capability of systems that need modification, upgrading, and learning without interrupting their operation.

The papers presented during the conference span many issues: fundamentals and theory, state-of-the-art evolvable hardware technology, design and development of reconfigurable devices conducive to evolution, survivable hardware, evolutionary robotics, brain-inspired architectures, and fault-tolerant systems.

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