

# How to Build a Device that Cannot Be Built

Samuel J. Lomonaco, Jr

## **Abstract**

In this paper, we show how the GHZ paradox can be used to design a computing device that cannot be physically implemented within the context of classical physics, but nonetheless can be within quantum physics, i.e., in a quantum physics lab. This example gives an illustration of the many subtleties involved in the quantum control of distributed quantum systems.

We also show how the second elementary symmetric Boolean function can be interpreted as a quantification of the nonlocality and indeterminism involved in the GHZ paradox.

Link to Paper: <https://www.csee.umbc.edu/~lomonaco/pubs/Unbuildable-QIP.pdf>