DNP19-2019-020011

Abstract for an Invited Paper
for the DNP19 Meeting of
the American Physical Society

Quantum Information and Nuclear Physics

JOHN PRESKILL, Caltech

I'll discuss the current status and future potential of quantum information science and technology, emphasizing the prospects for addressing Grand Challeges in Nuclear Physics using quantum computers, quantum simulators, and quantum sensors. Eventually, quantum computers and simulators will be able to explore properties of nuclear matter and features of hadronic dynamics that are beyond the reach of foreseeable classical computers. However, this big physics payoff may still be many years away. Realistically, the goal of the NP community in the near term should be to light the way toward future progress by developing new tools, methods, and insights. Todays research can hasten the arrival of a new era in which quantum technology fuels remarkable advances in NP research.