

# NPSS Climate Workshop on Nuclear and Plasma Solutions for Energy and Society



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## Accelerators Based Solutions –from Subcritical Reactors to Hadron Therapy & Isotopes

*Sunday 27 October 2024 14:00 (50 minutes)*

Particle Accelerators for Applications from Medicine to Sub-Critical Reactors

Nuclear power has the benefit of being a carbon-free energy source but generates long-lived radioactive waste and has the potential for impactful accidents. Particle accelerators were developed as scientific instruments but are also being used in industry and medicine. Hadron accelerators are increasingly being used to generate isotopes for nuclear medicine and hadron therapy. In the future, similar accelerators could be used to transmute nuclear waste and drive sub-critical nuclear reactors. Such applications could reduce the probability of severe accidents at nuclear power plants and reduce the long-term impact of the nuclear fuel cycle. This talk will explore the technologies and challenges associated with such applications and will consider some opportunities for future development.

**Presenter:** Prof. RAUBENHEIMER, Tor (Stanford University)