Hu X. Aghara S. K.
Assessment of Geometry Effects in Monte Carlo Simulations to Evaluate Neutron Albedo on the Lunar Surface [#3036]
Developing the small spherical and cylindrical geometry to study geometric effects. Placing water and human tissue cylinders above the cylindrical surface to study energy deposition of neutron albedo.

Tarditi A. G. Miley G. H.
Fission Fragment Direct Energy Conversion into Low-Frequency Alternating Current [#3090]
A different approach to fission fragments direct energy conversion is here considered by investigating the possibility of converting the fission fragment kinetic energy into alternating current via a traveling wave coupling.

Gamma-Ray Isotopic Analysis of Heat Source Plutonium Using FRAM Software [#3007]
An alternative method for the determination of plutonium isotopic abundances in heat source plutonium (>80% $^{238}\text{Pu}$) uses high-purity germanium detectors in conjunction with the LANL developed FRAM software package.

Howe T. M. O’Brien R. C. Stoots C. M.
Development of a Small-Scale Radioisotope Thermo-Photovoltaic Power Source [#3059]
Overview of an RTPV space power system utilizing variable emitter shapes, temperatures, and materials to allow for a customizable power source with high efficiency and low mass to be housed safely in proximity to instruments and equipment.

Fraeman M. E. Frankford D. P. Shamkovich A. L. Denissen R. A.
Single Stirling Convertor Controller Spacecraft Interface [#3012]
The interface between an active controller for a single Stirling convertor and a spacecraft is described. The controller can detect a wide variety of interface faults and then implement corrective actions that allow the mission to continue.

Thelander S. D. Lohman K. T. Schmidt E. A. Williams C. H.
Initial Vibration Analysis of the Aneutronic Fusion Propulsion Experiment [#3089]
The present study explores the feasibility of direct energy conversion from the products of aneutronic fusion reactions directly into propulsive thrust.

Peterson J. R. Kurwitz R. C. Carron I.
Nuclear-Powered Co-Electrolysis for Mars Combined Life Support and Methanol Production [#3002]
High temperature co-electrolysis can be used to reduce $\text{H}_2\text{O}$ and $\text{CO}_2$ simultaneously in an integrated nuclear-powered concept for combined life support and in situ resource utilization for space applications.

Tarditi A. G. Miley G. H. Scott J. H.
Investigation on Enabling Technologies for a Near-Term Aneutronic Fusion Propulsion Experiment [#3089]