Abstract Submitted
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**GSNP Student Poster Competition Winner: The HUNTER Sterile Neutrino Search Experiment: 131-Cs Magneto-Optical Trap Development**[1] EDDIE CHANG, University of California, Los Angeles, FRANCESCO GRANATO, Temple University, PAUL HAMILTON, ERIC HUDSON, University of California, Los Angeles, BASU LAMICHHANE, Temple University, FRANK MALATINO, University of Houston, CHARLES MARTOFF, Temple University, PETER MEYERS, Princeton University, ANDREW RENSHAW, University of Houston, CHRISTIAN SCHNEIDER, PETER SMITH, University of California, Los Angeles, XUNZHEN YU, Temple University, HUNTER COLLABORATION[2] — The HUNTER experiment (Heavy Unseen Neutrinos by Total Energy-Momentum Reconstruction) is a search for sterile neutrinos with masses in the keV range. The neutrino missing mass will be reconstructed from 131-Cs electron capture decays occurring in a magneto-optically trapped (MOT) sample. Reaction-microscope spectrometers will detect all charged decay products with high solid angle efficiency and LYSO scintillators read out by silicon photomultiplier arrays will detect x-rays, each with sufficient resolution to reconstruct the neutrino missing mass. The short half-life of about 9.5 d of 131-Cs paired with the requirement to run the experiment over timescales on the order of one year to obtain the target sensitivity present special challenges for the MOT. We will present progress on the 131-Cs MOT development at UCLA, including development of an efficient orthotropic oven source.

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[2]Heavy Unseen Neutrinos by Total Energy-Momentum Reconstruction

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