

Abstract Submitted  
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**Absorption Spectroscopy of Pulsed Power Driven Metal Plasmas**  
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Studies — We present here the use of the continuum radiation from X-pinch-  
produced point x-ray sources for absorption spectroscopy as a new diagnostic to  
investigate the properties of aluminum plasmas created by pulsed power machines  
at 500 kA and 1 MA. This technique is being developed to provide a path towards  
determining time and space resolved plasma parameters (charge state, temperature  
and density) under conditions that are inaccessible to traditional x-ray spectroscopic  
diagnostics. The diagnostic apparatus, setup and characterization will be described,  
including estimates of spatial and spectral resolution. Preliminary results from ex-  
ploding wires and wire array z-pinches are shown and compared with synthetic  
spectra. The technique is also applied to the dense core of exploding wires, which is  
known to exist in a multiphase state and has previously eluded quantitative study.  
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