

Abstract Submitted  
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**Generation of Polarized Shear Alfvén Waves by a Rotating Magnetic Field Source**<sup>1</sup> ALEX GIGLIOTTI, WALTER GEKELMAN, PATRICK PRIBYL, STEPHEN VINCENA, Dept. Physics, UCLA, ALEX KARAVAEV, XI SHAO, DENNIS PAPADOPOULOS, Dept. Physics, Univ. Maryland — We report on the generation and characterization of polarized kinetic shear Alfvén waves radiated from a rotating magnetic field created via a novel phased orthogonal loop antenna. Both right and left hand polarization's are generated at a wide range of frequencies from  $0.01 < \omega/\Omega_{ci} < 1.0$ . Propagation parallel to the background magnetic field at the Alfvén velocity is observed along with a negligible parallel wave magnetic field component implying a shear mode. The magnitude of the waves magnetic field is on the order of 0.4% of the background field. Small amplitude second harmonic generation is seen along with indirect evidence of electron heating and/or fast electrons during the pulse implying non-linear response. Three-dimensional data of the wave fields and currents will be presented.

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