

Abstract Submitted
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Acceleration of electrons and maser radiation from collisionless shocks R. BINGHAM, R. BAMFORD, R. TRINES, B. KELLETT, STFC RAL, Didcot, UK, R.A. CAIRNS, U. St. Andrews, Fife, UK, D. SPEIRS, K. RONALD, A. PHELPS, U. Strathclyde, Glasgow, UK, M. KOEPKE, WVU, Morgantown, WV, F. CRUZ, R. FONSECA, L. SILVA, IST Lisbon, Portugal, A. RIGBY, G. GREGORI, U. Oxford, UK — Collisionless shock waves arise in many areas of laboratory and space plasmas, such as the Z-pinch and theta pinch, plasma accelerators, laser fusion, planetary bow shocks, artificial releases, solar flares and CMEs, pulsars, jets, accretion discs, and galaxy clusters. Collisionless shocks are responsible for energizing particles and non-thermal electromagnetic emission from the accelerated electrons. One of the mechanisms in producing energetic electrons at low Mach number magnetized collisionless shock waves is through the generation of lower-hybrid turbulence via shock-reflected ions and acceleration of electrons by the lower-hybrid waves. These accelerated electrons can either radiate cyclotron maser radiation if magnetically compressed by moving into stronger field regions or generate EM waves via the creation of Langmuir waves which subsequently undergo inverse two-plasmon decay.

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