

# MASER EMISSION FROM RELATIVISTIC SHOCKS

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Synchrotron maser instability at the relativistic, weakly magnetized shock generates strong low-frequency electromagnetic waves. Upstream of the shock, these waves make electrons lag behind ions so that a longitudinal electric field arises and the kinetic energy is efficiently transferred from ions to electrons. Downstream of the shock, the amplitude of these waves may exceed the strength of the shock compressed background magnetic field so that the shock accelerated particles radiate via nonlinear Compton scattering rather than via synchrotron mechanism.