

# MONTE CARLO CALCULATIONS OF PARTICLE TRAJECTORIES AT SUPERLUMINAL SHOCK WAVES

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We calculate the spectrum shape and the energy gain per shock crossing at oblique super-luminal shock waves using the picture of shock drift mechanism. We use high gamma flows with Lorentz factors ranging 5-40 which are relevant to Active Galactic Nuclei ultra-relativistic shock configurations. We closely follow the particle's trajectory along the magnetic field lines, constantly measuring its phase space co-ordinates in the fluid frames where  $\mathbf{E}=0$  and through its motion across the shock. We calculate the energy gain for a number of different inclinations and a calculation of the spectrum of the accelerated particles is given.