

# MAGNETIC FIELD LINES WANDERING AND SHOCK FRONT ACCELERATION: CASE OF SN1987A

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The acceleration time at a shock front of cosmic rays scattered along wandering magnetic field lines is derived as a function of the obliquity and speed of the shock for a general transport exponent of the field lines. For high speed shocks, the magnetic field lines wandering can make the acceleration time depart by orders of magnitude from its value estimated in the approximation of simple scattering. This discrepancy is most welcome to explain the acceleration time of GeV-electrons at the reappearance of SN1987A in the radio waveband, as the inferred diffusion coefficient along the shock normal is about five orders of magnitude greater than the limiting Bohm value of a cross-field scattering coefficient. It is also shown that the shock speed and number of scatterings upstream of the shock could be the determining parameters in the reappearance of SN1987A.