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Classical and Quantum Scattering by Impulsive Fields

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We discuss the scattering behaviour of both classical (point) particles as well as their quantum (wave) analogues by impulsive wave fronts. Examples cover Yang-Mills pulses with corresponding (generalized) Lorentz-trajectories and Yang-Mills-Dirac-fields. We also consider the dynamics of Mathiesson-Papapetrou-spinning particles and of Dirac-fields in impulsive gravitational pp-waves.