

Theoretical Particle Physics

Radiation is the electromagnetic fields propagating in space carrying energy to infinite distances as it is inversely dependent on distance. The fields created by the accelerating charge particle exerts force back on the particle itself which is called as **Radiation Reaction force** or the **Abraham-Lorentz force**, which is proportional to the jerk(rate of change of acceleration). The solutions for the radiation reaction has inconsistencies as either the particle keeps on accelerating with increase in time(**runaways**) or the particle accelerates even before the force is applied(**pre-acceleration**) and one cannot remove them simultaneously.

Topics of Research:

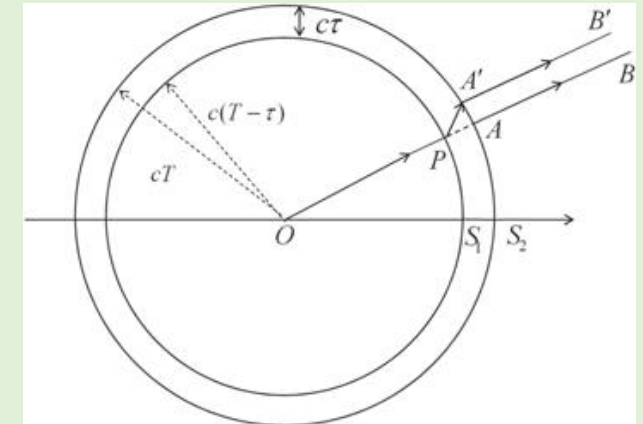
- Studying radiation reaction in Lorentz-violating and non-commutative Electrodynamics.
- Radiation reaction for a quantum charge particle in Local/Non-local Electrodynamics.

Faculty:

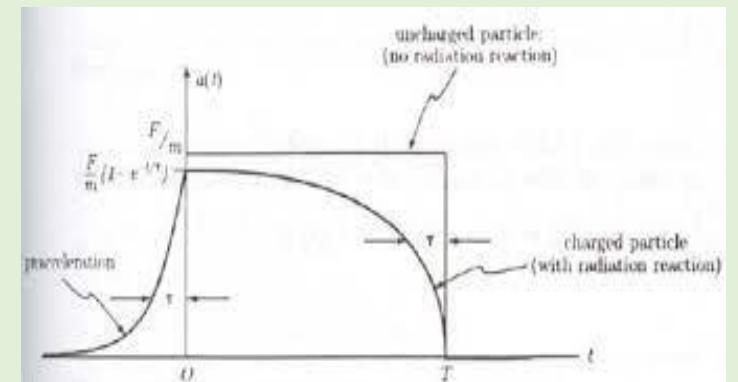
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PhD Students:

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Average Lorentz self-force from electric field lines
S Aashish, A Haque - European Journal of Physics, 2015



Introduction to Electrodynamics, Griffiths