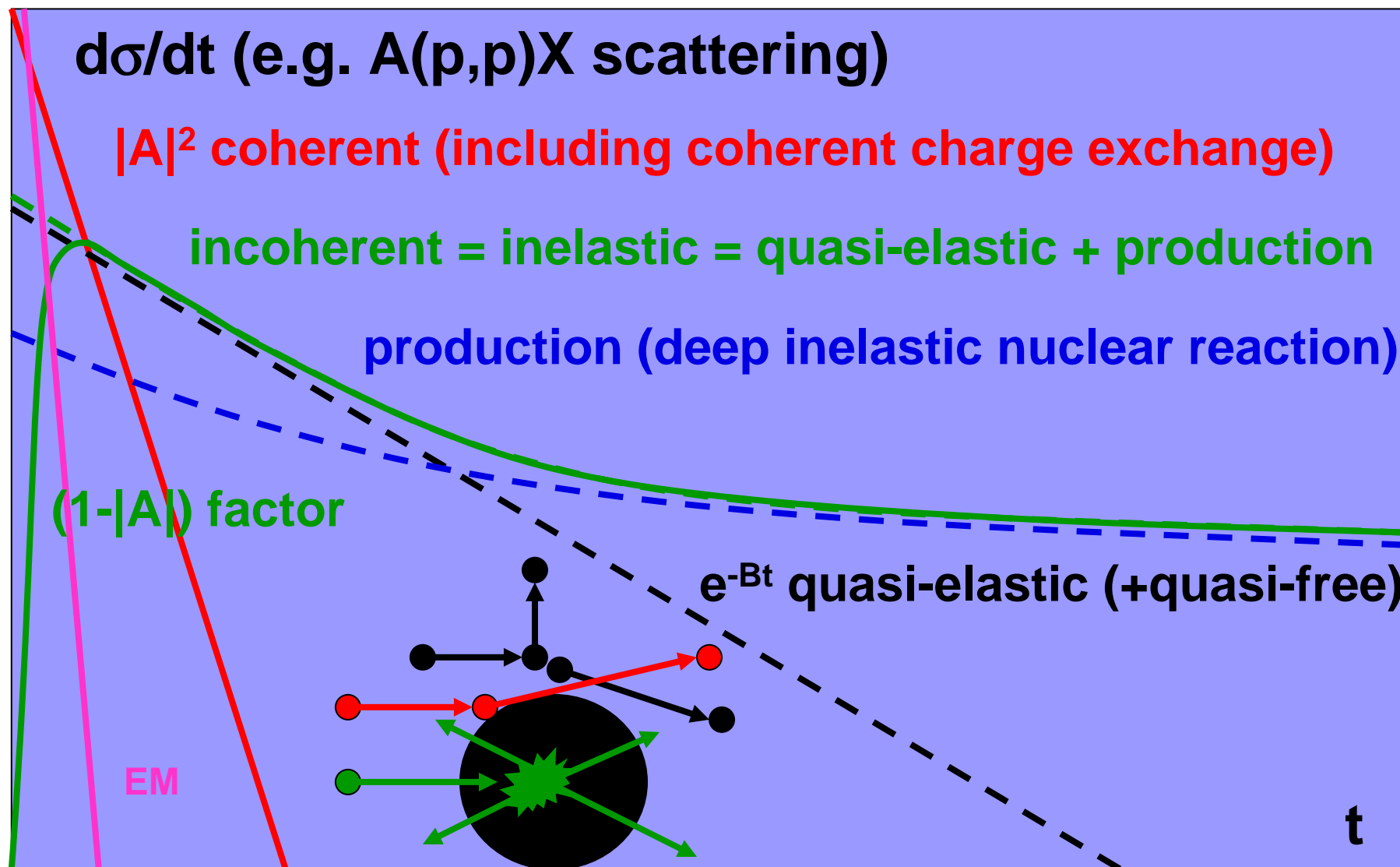


Reaction cross-sections and coverage of Hadronic Physics in Geant4

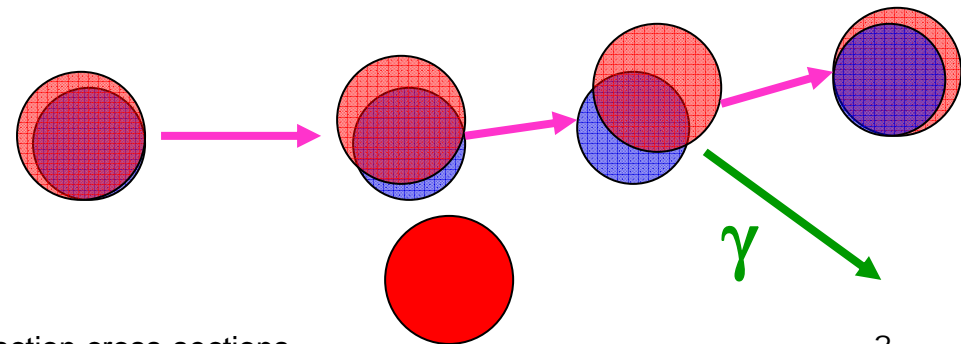
Mikhail Kosov, Lisbon, 2006

High energy Glauber approach



Low energy reaction cross-sections

- Absorption cross-section (e.g. $A(\pi, X)$ when there is no π -mesons in final state)
- Be careful because at high energies can be **absorption = inelastic = production**
- Fission cross-section (important only for low energies and heavy target nuclei)
- Electromagnetic dipole excitation (only in ion-ion collisions)





Coverage of Hadronic Package in G4

- In zero approximation LHEP covers all hadron-nuclear reactions (quasi-elastic?) except for hyperons and antibaryons
- Bertini Cascade can now cover hyperons
- Binary Cascade covers low energy ion-ion
- QGS/CHIPS can cover antibaryons
- The 1st “hole” is high energy ion-ion
- The 2nd one is coherent charge-exchange
- The 3d is quasi-free (including diffraction)

