



The University of Virginia Femtography group has produced a simulation of the inside of a particle accelerator. This is part of a public outreach and education campaign to highlight the work we are doing in collaboration with other universities in Virginia, as well as the Jefferson Lab (www.jlab.org).

The current simulation shows the way that momentum transfer allows us to “see” the inside of a proton using a process called Deeply Virtual Compton Scattering. The simulation takes the player through each step, highlighting some non-intuitive aspects of the process (such as the “drive by” release of photons instead of newtonian collisions between particles). It also allows the player to view the interior of the proton at different levels of momentum transfer (Q^2), which show a visualization of how quark-anti-quark pairs emerge and disappear at the quantum level.

We hope to continue building the simulation to show other methods and explain other concepts. We realize it is a somewhat humble effort compared to many of the high-gloss products available on the Quest Store, but it fills an important educational niche. We see it as being of value to middle and high school students, as well as the general public.

Thank you for considering.

