

Photon Emissions from Excited Hydrogen and Positronium

Monday, 31 March 2025 13:00 (1 hour)

Electromagnetic bound states emit photons, with a well-known example being the $2P \rightarrow 1S$ transition of the hydrogen atom, which leads to the ground state and a single photon. But to what extent can this decay be accurately described by an exponential decay law? Next, we examine the decay of parapositronium into two photons using a theoretical approach inspired by nuclear physics: the compositeness condition. What insights does this provide? And how can these lessons be applied to other gamma-gamma decays, such as those of quarkonia?

Presenter: GIACOSA, Francesco (Jan Kochanowski University of Kielce)