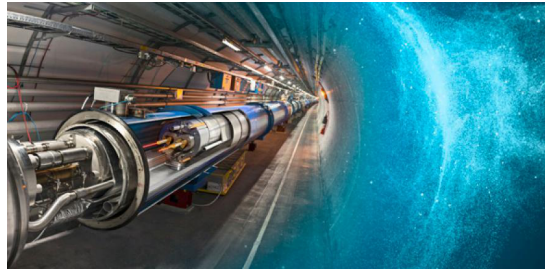


# First Pan-African Astro-Particle and Collider Physics Workshop



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## Overview on laser-assisted decay processes

*Monday, 21 March 2022 14:55 (15 minutes)*

This work focuses on the controversial debate that has arisen over the last two decades about the possibility that the electromagnetic field affects the lifetime or decay width of an unstable particle. In this presentation, we highlight the possible effect of the electromagnetic field on the decay of particles through the theoretical study of some decay processes such as those of the  $\pi$  (pion) meson and the intermediate vector bosons  $W$  and  $Z$  in the presence of an electromagnetic field. Expressions for the decay width and lifetime in the presence of the field have been derived in the framework of the standard electroweak model. The numerical results obtained are presented and discussed.

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