

HERTZ LECTURE.

DESY Lecture on Physics 2025

Visible and Invisible in fundamental physics and art

Prof. Dr. Michelangelo Mangano
CERN



Wednesday, 24 September 2025, 17:30 h
DESY main auditorium
<https://webcast.desy.de>

Deutsches Elektronen-Synchrotron DESY
A Research Centre of the Helmholtz Association

MULTI-PARTON AMPLITUDES IN GAUGE THEORIES

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ALPGEN, a generator for hard multiparton processes
in hadronic collisions *

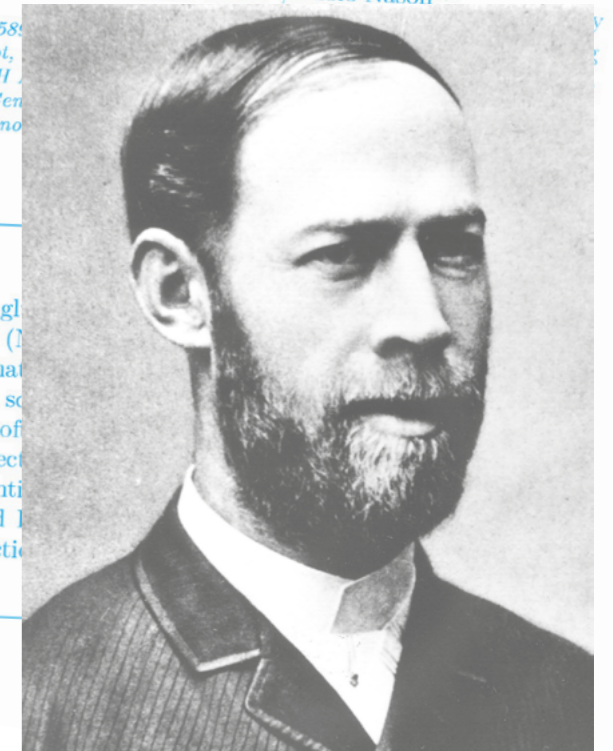
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Top-pair production at hadron colliders with
next-to-next-to-leading logarithmic soft-gluon resummation

Matteo Cacciari^{a,b}, Michał Czakon^c, Michelangelo Mangano^d, Alexander Mitov^d, Paolo Nason^{d,e}

The relation between visible and invisible emerges in many areas, from art to science, from religion to philosophy. In this lecture, starting from the pioneering role of Heinrich Hertz in „making the invisible visible“, I highlight the role that “invisibles” have played and play in the development of modern physics while understanding the nature of matter and forces at the fundamental level. This is accompanied by references to the work of Salvador Dalí, the most famous artist to have been influenced by physics in his own exploration of the “invisible”.



Heinrich Hertz
1857 Hamburg-Karlsruhe-Bonn 1894

NLL RESUMMATION
OF THE HEAVY-QUARK
HADROPRODUCTION CROSS-SECTION

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Matching matrix elements and shower evolution for
top-quark production in hadronic collisions

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