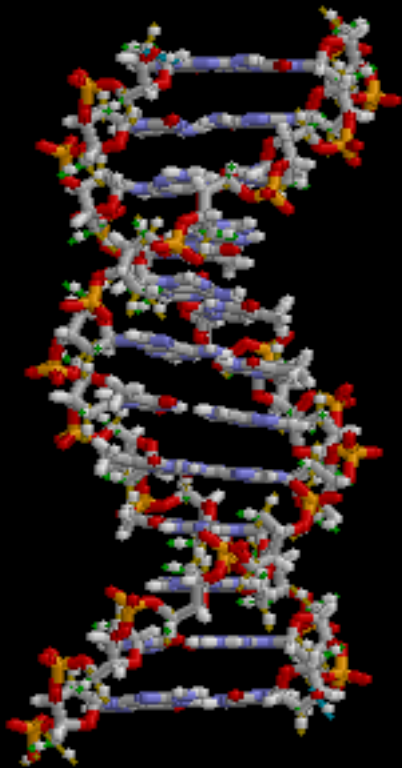


A scenic landscape featuring a stone wall in the foreground, a large tree with bare branches on the left, a green hillside in the middle ground, and a dense forest in the background under a cloudy sky. The text "De magische wereld van het allerkleinste" is overlaid on the right side of the image.

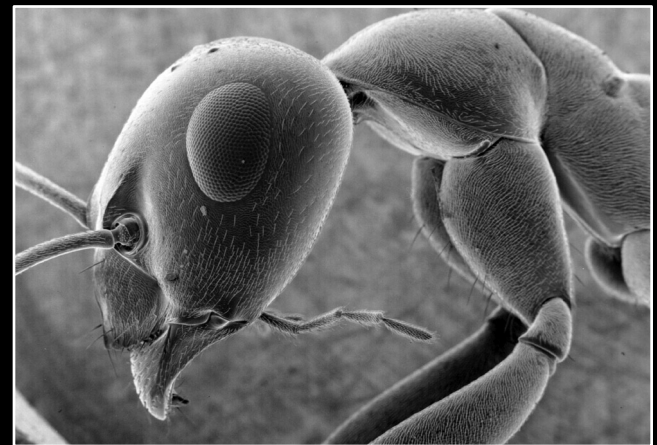
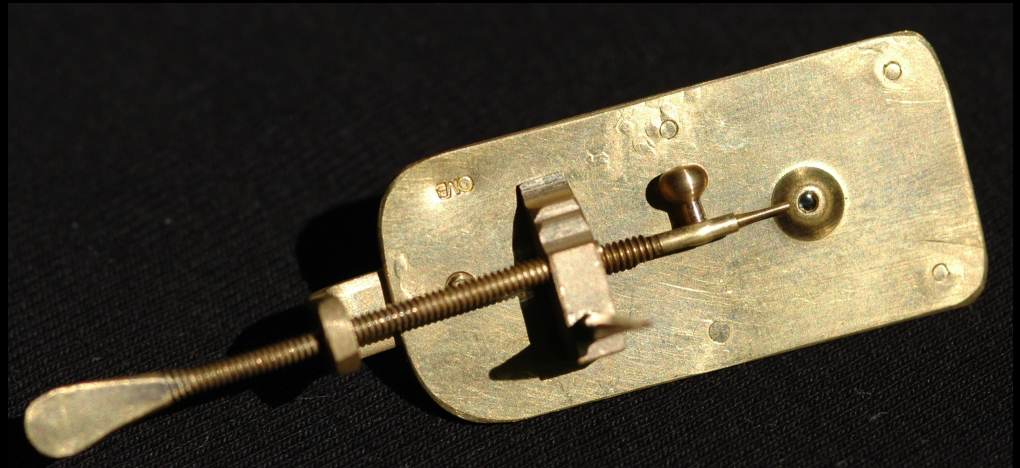
De magische wereld van het allerkleinste

Ivo van Vulpen (UvA/Nikhef)

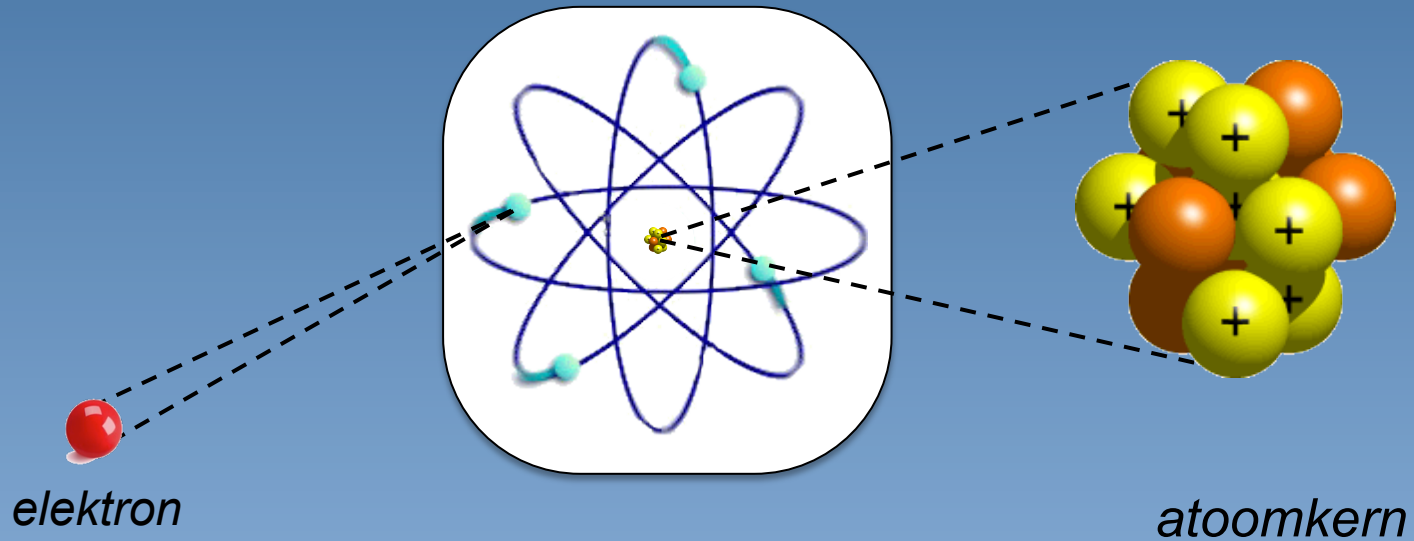
Microscopen



DNA



De wereld van het atoom



Wereldrecord: 1000 x kleiner dan kerndeeltje

CERN laboratorium in Genève



Elementaire deeltjes

up-quark



down-quark



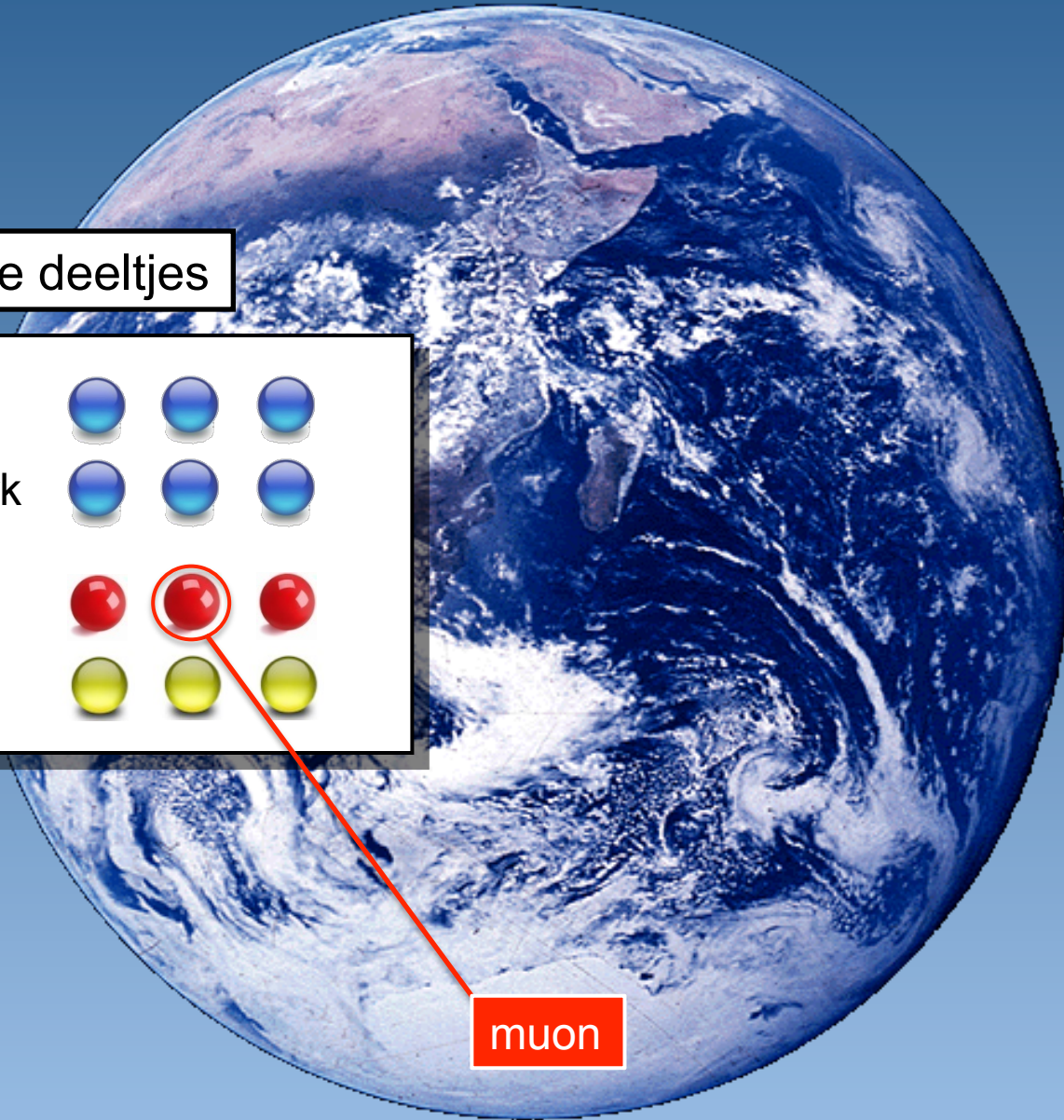
elektron



neutrino



muon



Er is meer tussen hemel en aarde

“Er zweven electromagnetische golven in deze zaal die stemmen bevatten”

antenne

radio



Er is meer tussen hemel en aarde

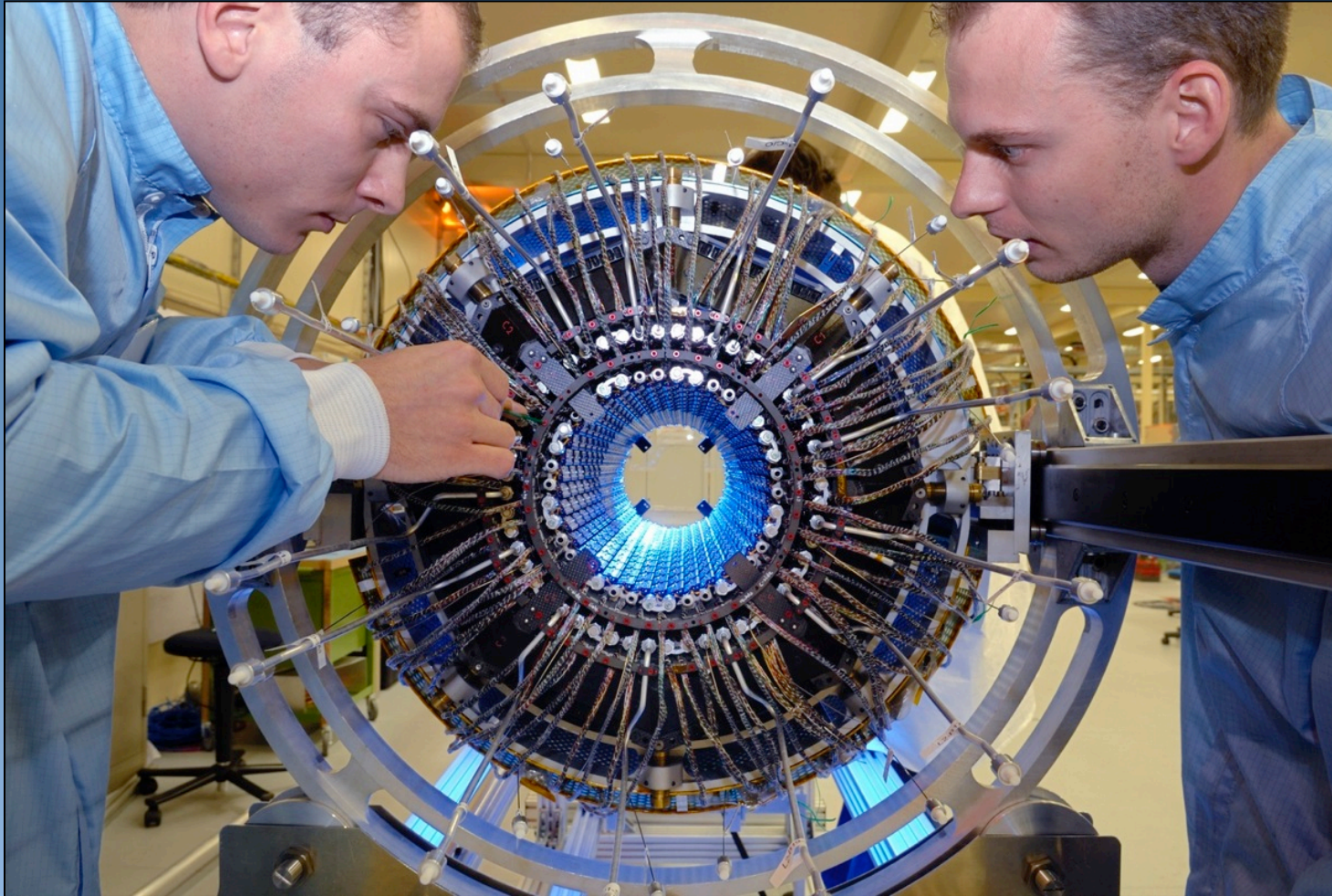


muon detector op Nikhef

“Er schieten exotische deeltjes door de schouwburg die 0.000002 seconde leven”

“Ze worden gemaakt als kosmische stralen op luchtmoleculen botsen in de atmosfeer”

Deeltjesdetectoren op CERN



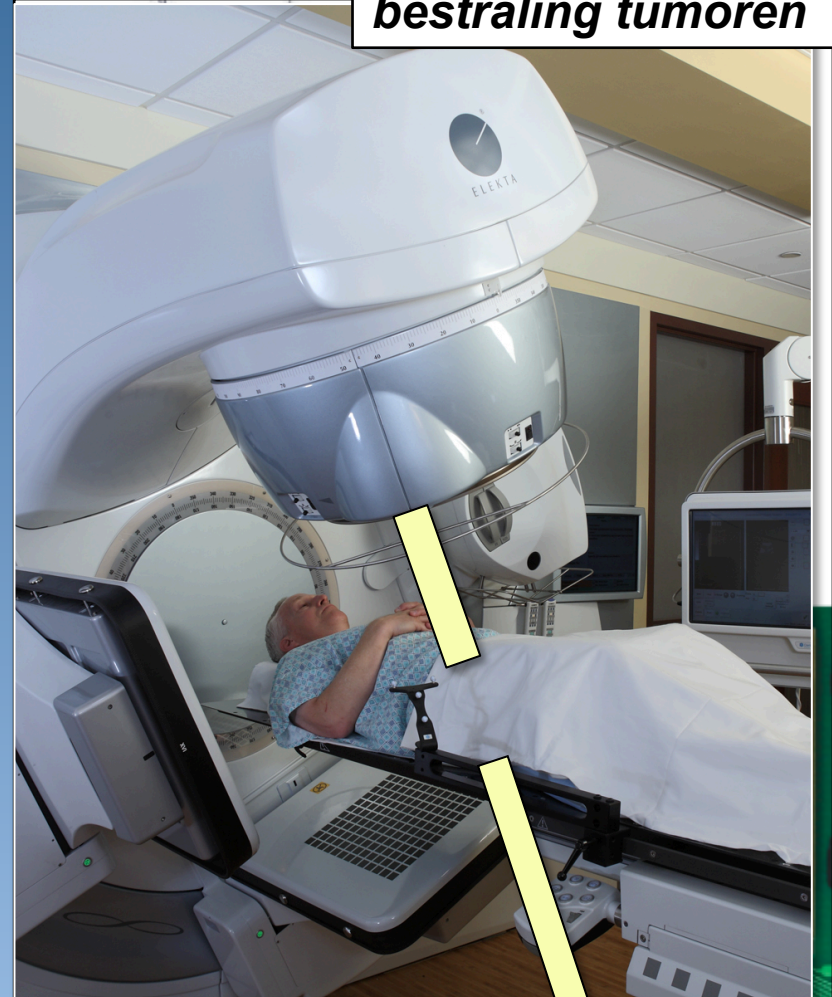
80 Megapixel en 1.000.000.000 foto's per seconde

Deeltjesdetectoren in het ziekenhuis

Röntgen

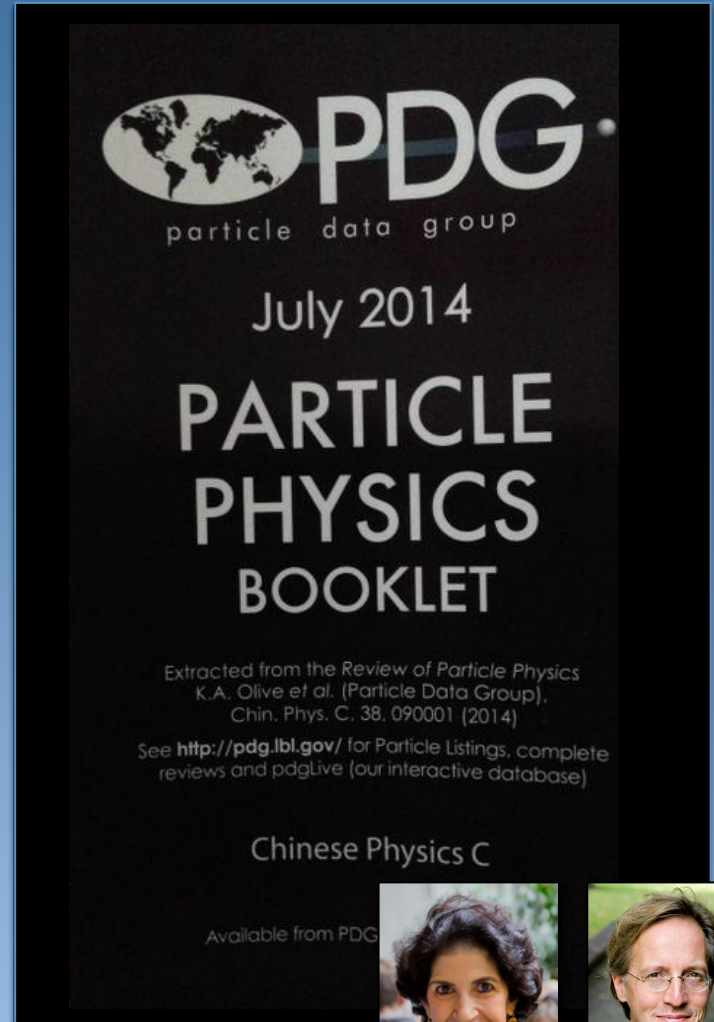
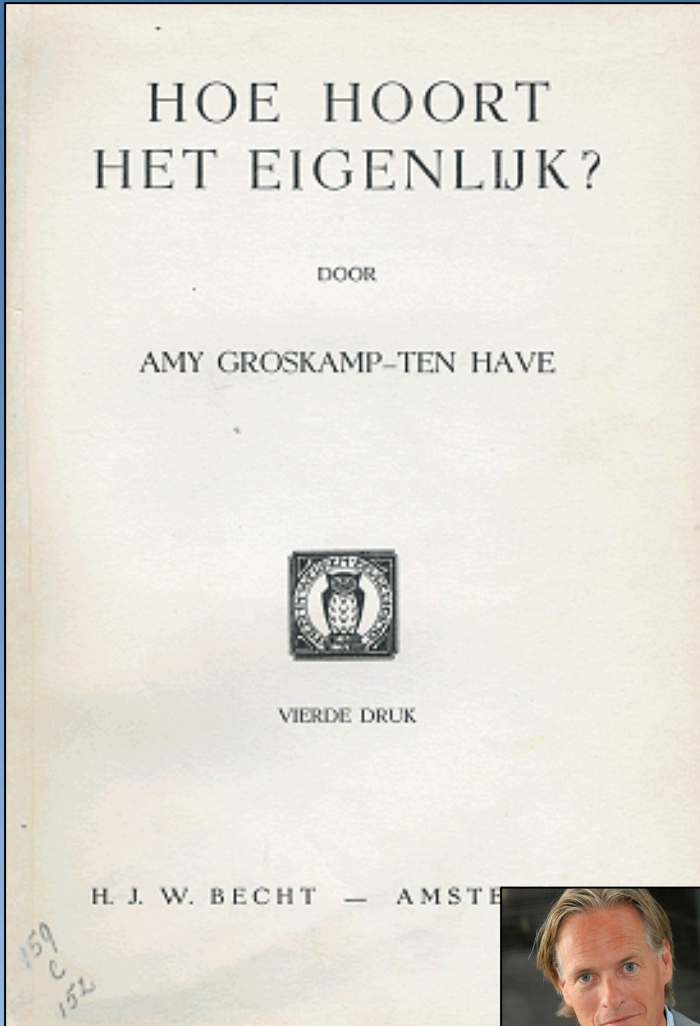


bestraling tumoren

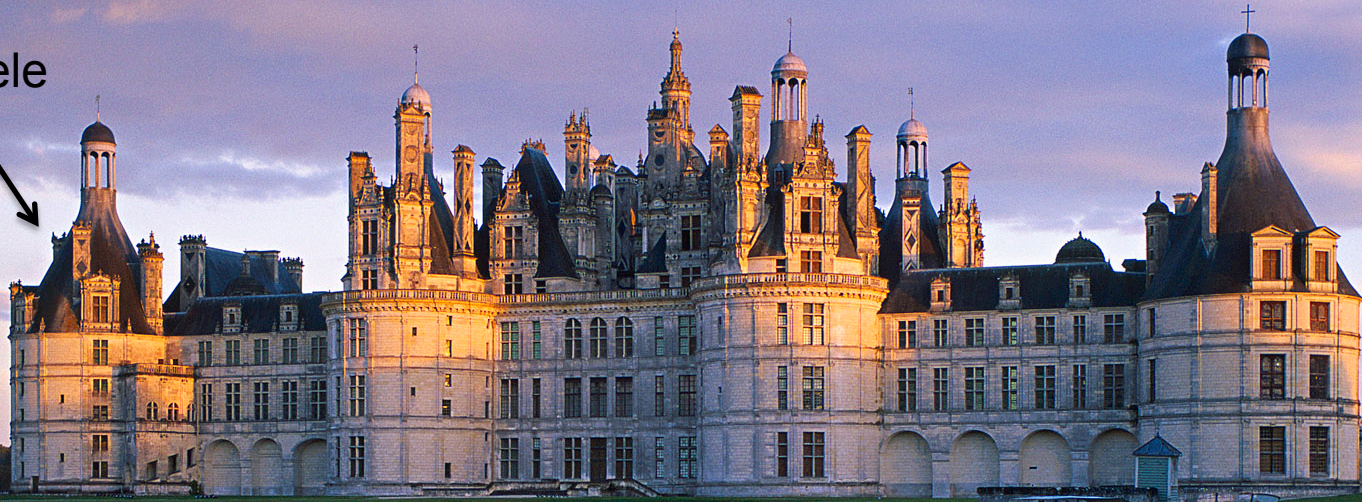


keurige grote mensen

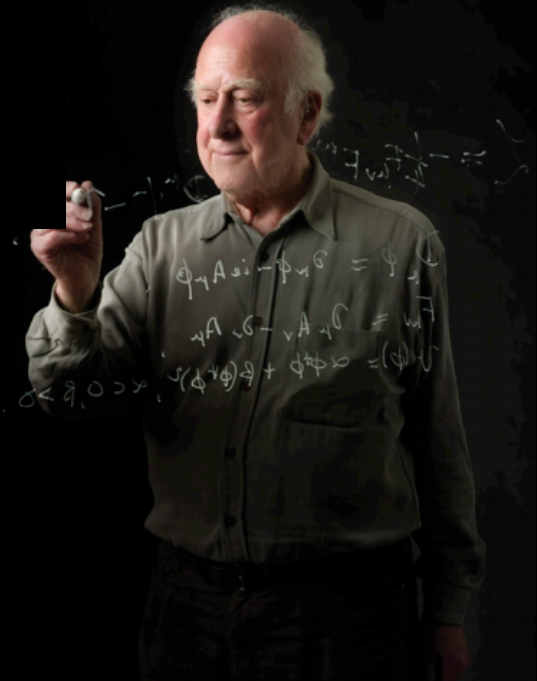
keurige kleine deeltjes



de stabiele
wereld



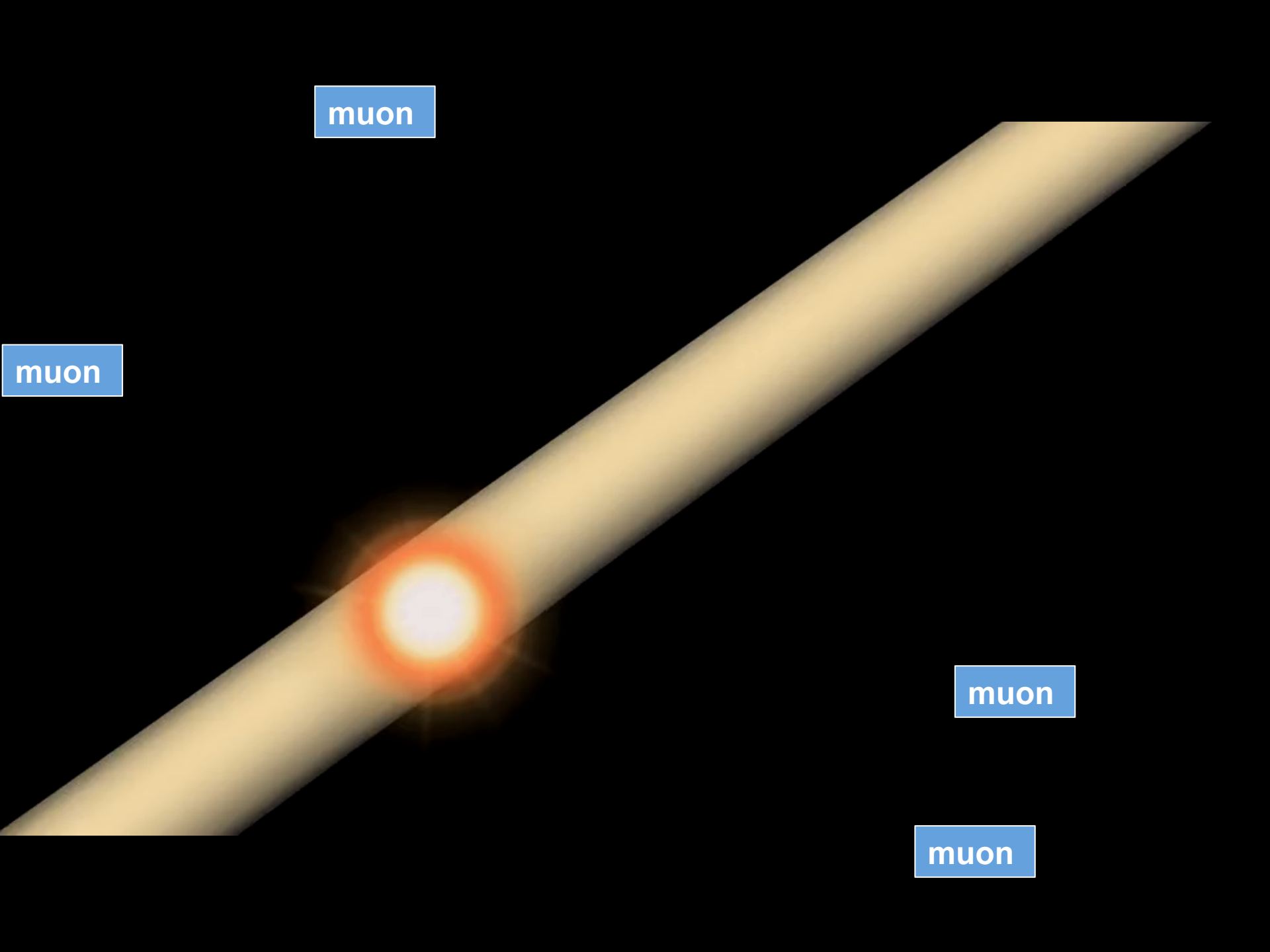
Het Higgs boson geeft deeltjes massa



An aerial photograph of a vast landscape in Switzerland, showing a patchwork of green and brown fields, a large blue lake, and distant snow-capped mountains. A red oval is drawn over the central part of the image, indicating the path of the Large Hadron Collider (LHC) tunnel. In the center of this oval is a blue rectangular box with white text.

Large Hadron Collider (LHC)

zelf deeltjes maken: $E = mc^2$



muon

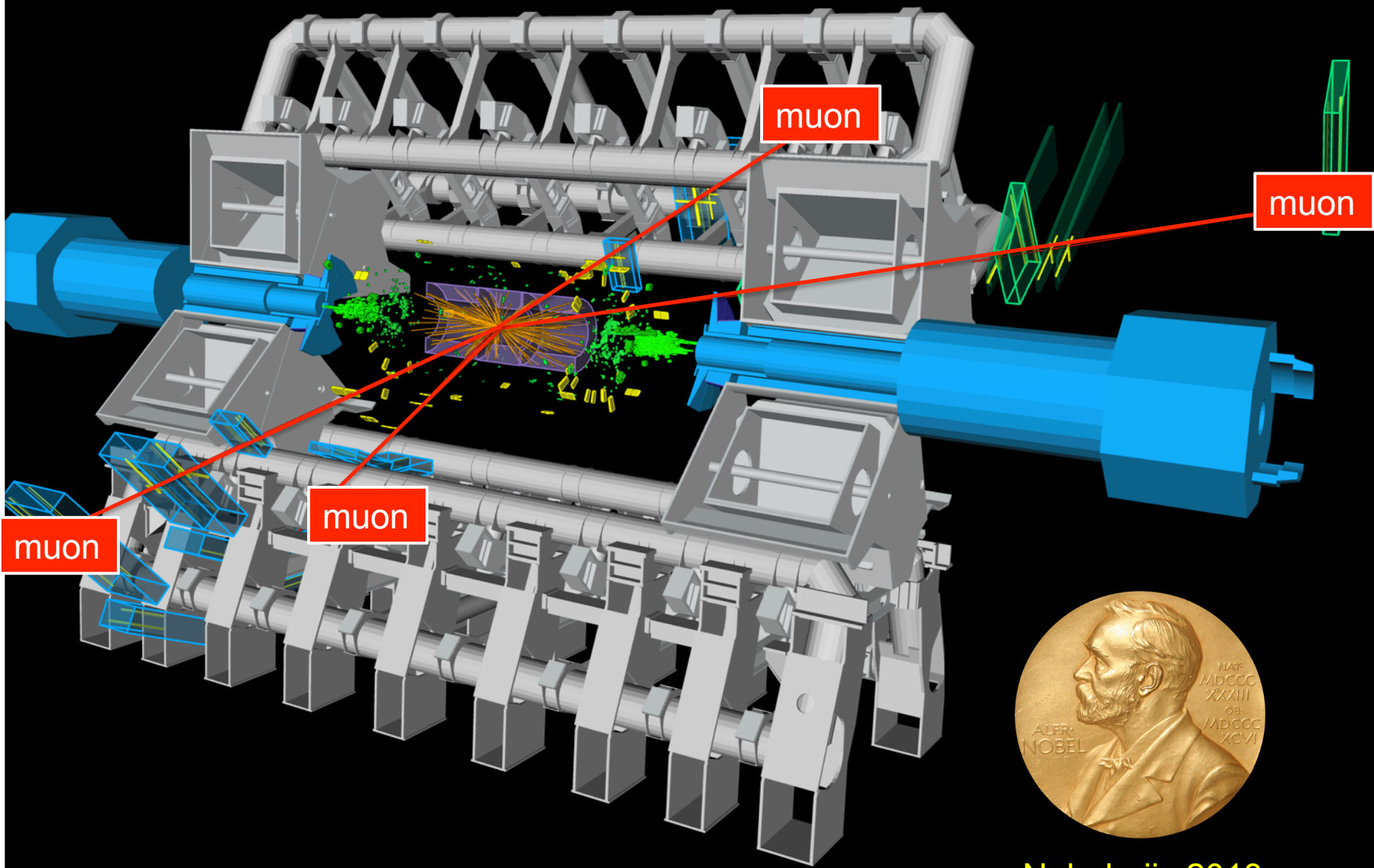
muon

muon

muon

ATLAS experiment





muon

muon

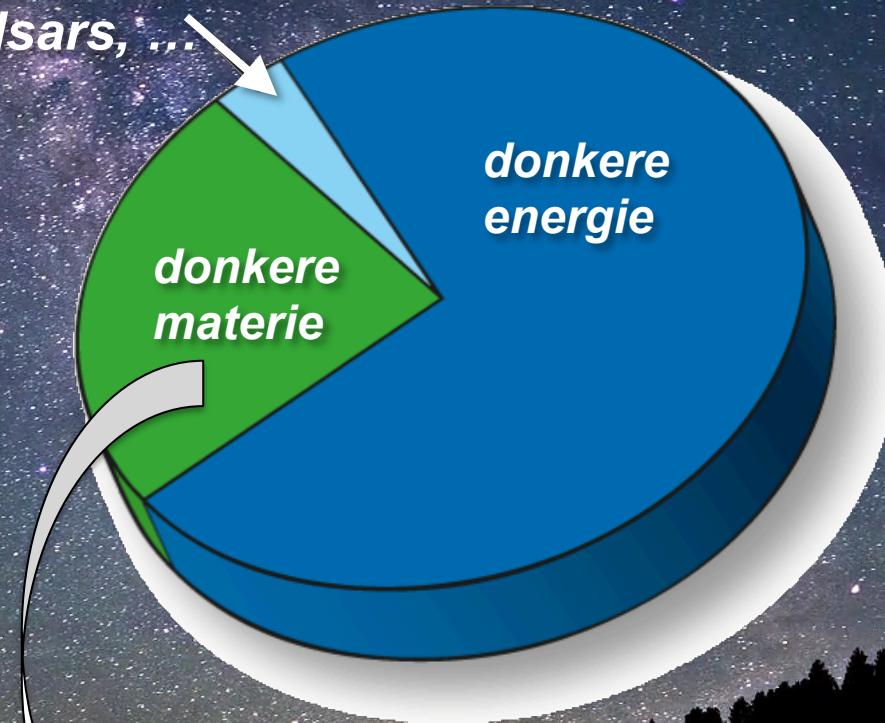
muon

muon



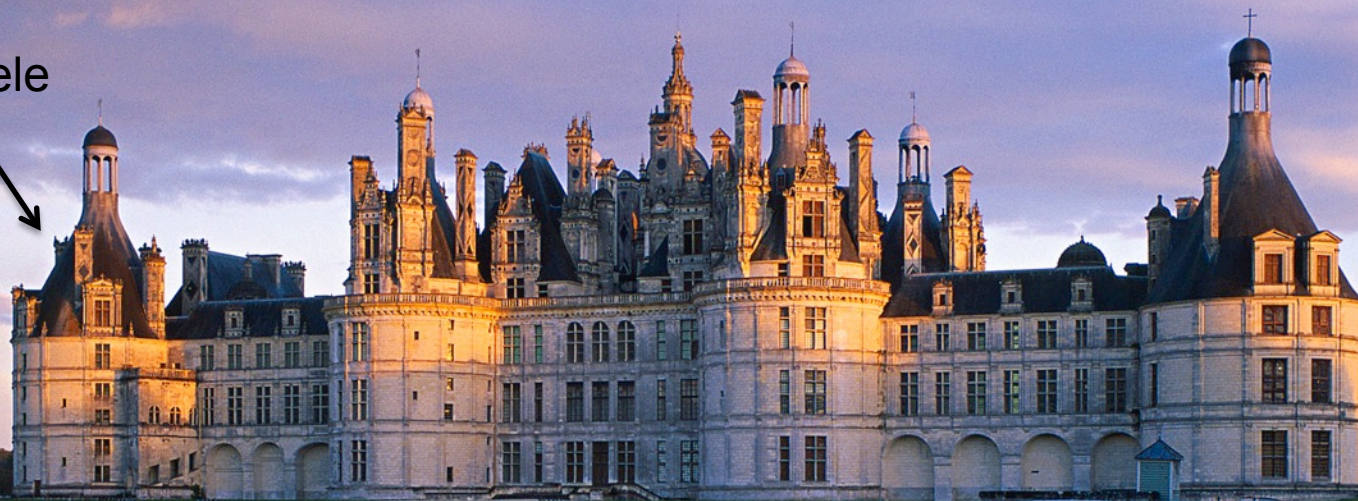
Nobelprijs 2013

sterren, planeten,
gas, pulsars, ...



deeltje uit een spiegelwereld ?

de stabiele
wereld



grensverleggende
'ver-weg' foto (2015)



Pluto

grensverleggende
'dichtbij' foto (2015)

spiegelwereld ?

ATLAS experiment
18 september 2015
02:47:06 uur

@IvovanVulpen

