

High energy physics: The edge of possibility

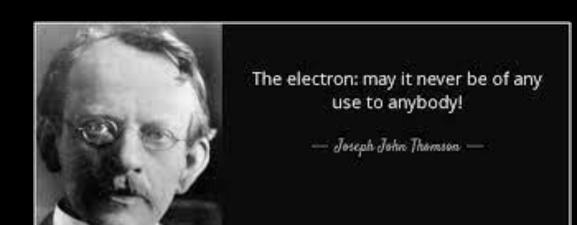
Xola Mapekula 16 September 2023 University of Johannesburg

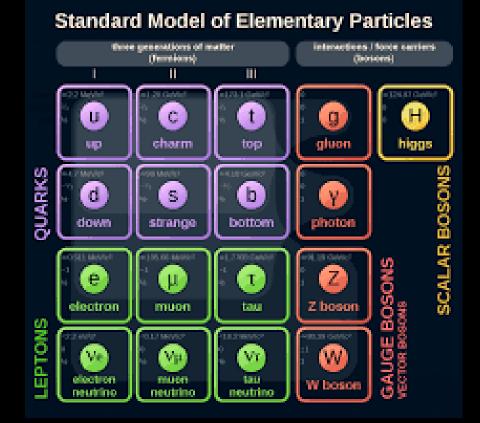
Brief introduction about myself

- Background in mechanical engineering
 - I know this is strange but please let me explain
- Did my masters in high energy physics
 - This is where my imagination started runningwild

XG MAPEKULA ACP 2023

Why I carried on with High Energy physics

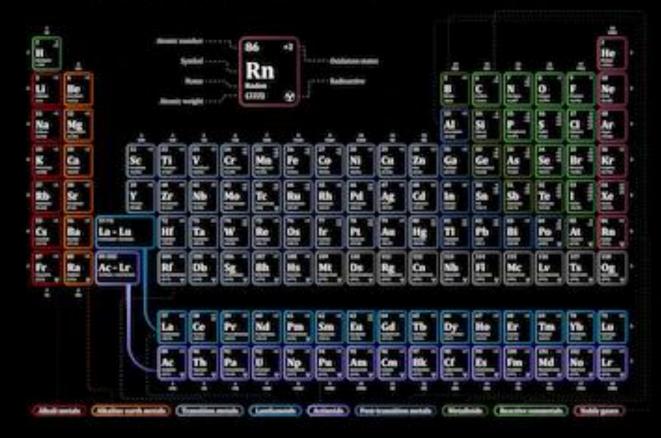




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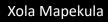
What if there was a periodic table for dark matter

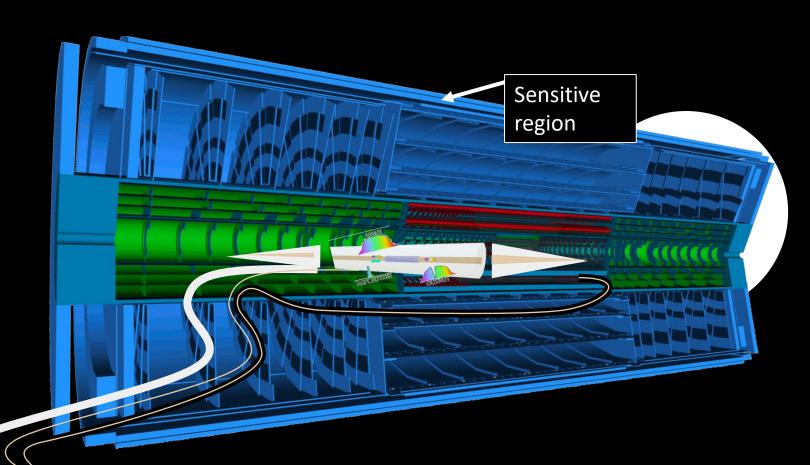
Periodic Table of Elements



Still get to do engineering work

- Currently working on developing fiber optic sensors
- Impact sensitive parts of the detector which include sensors that monitor environment
- Sensors close to collision point are exposed to the most radiation
- Need solution for sensors that are resistant to radiation damage
- Possible solution has been studied for radiation hard sensors that monitor temperature and humidity inside the detector





Acts Common Tracking Software Collision Event at 7 TeV atts

Brief introduction about myself

- Will dedicate my academic life to the study of dark matter
- Also use my expertise as an engineer to use technology developed at High energy physics collaborations to solve societal problems
- Hope to see the day where we can use dark can be used to solve energy problem

Thank you

9/29/2023

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