



23<sup>rd</sup> Meeting of the International Particle Physics Outreach Group

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# Particle Physics in Middle Schools





# Middle schools

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- Simple activities
- Fun
- Students move around
- Three parts
- Easy to get things



# Powers of 10

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## Talking about bigger numbers

- If they're outside, they can run around to find/imitate the electron
- If they're inside, use a pinhead

## How do we know things are so small?

- Scattering (in the sand) - 1D+2D



# Acceleration

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## Linear acceleration

- Pushing with constant pressure: goes further and further

## Steering

- Pink pong ball on a string, turn it around: the faster you turn it, the more force you need



# Detection

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Particle identification with tracks: who left which track?

- Balls in the sand

Higgs boson: objects with different weight interact with the sand more