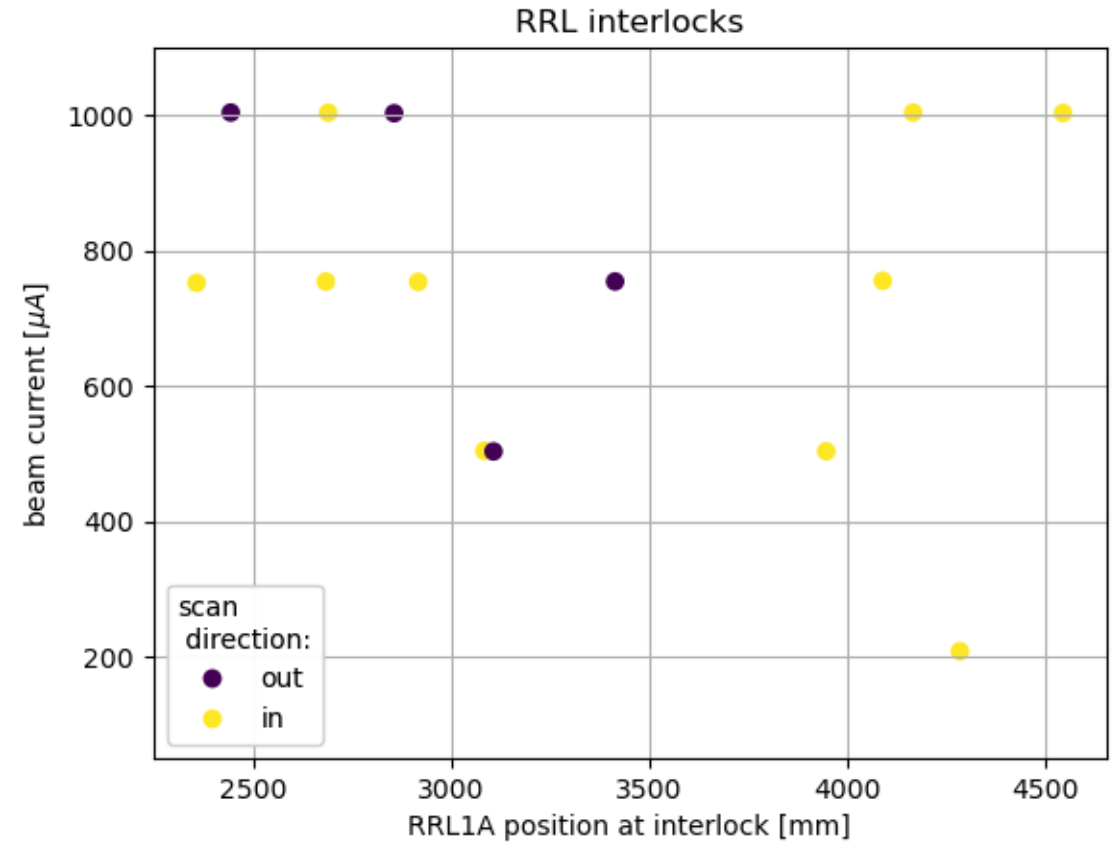


# Investigation of RRL-EIC interlocks

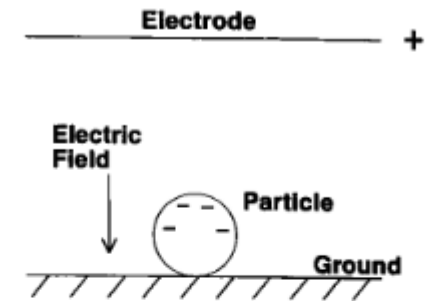
- 1 During movement RRL generates EIC interlocks.
- 2 EIC issues interlock if dark current is higher than a threshold. Currently the threshold is at 150  $\mu\text{A}$  (Dietmar)
- 3 We've done scans, mainly with RRL wagon A, to check dependence of the interlock on beam current (in range 100-1000  $\mu\text{A}$ ) and RRL position
- 4 Similar study was already done in 2022 with similar conclusions

- No interlocks at 100  $\mu\text{A}$
- More interlocks during movement “IN” than “OUT”
- No clear “interlock spots”
- Wagon B also gives interlocks

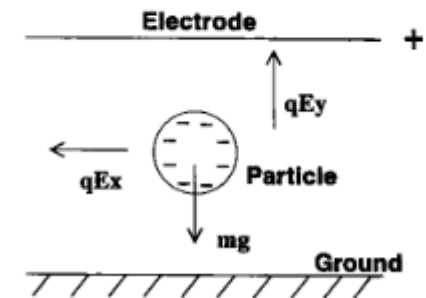


# What is happening?

- 1 It is probably dust released by RRL vibrations or carried towards EIC by upper transmission belt



(a) Induction charging of a particle



(b) Induced Coulomb forces on a floated particle

# What to do?

- 1 We can increase EIC interlock limit to 250  $\mu$ A
- 2 Clean the machine very well
- 3 Investigate better shield between RRL and EIC
- 4 Investigate dust removal/collection device based, for instance, on electrostatic principle
- 5 Move RRL far from EIC