

Update on VSim simulation

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Discharge simulation

- Initialise the electrons into the simulation of previous lens by simulating the discharge
- Background gas
 - Ar (modelled as a fluid, $1e14 \text{ m}^{-3}$ nominal density)
- Reactions
 - Elastic electron-ion collisions
 - Impact excitation
 - Impact ionisation with Ar^+ production
- Secondary electron emission on the surface of electrodes
- Electrons emitted with constant current from end tubes
 - Emitted normal to the surface
 - Control over their thermal velocity components

Discharge simulation

- Critical input parameters
 - Excitation energy
 - All cross-sections (currently taken from sample library found in VSim examples for Ar as background gas)
 - Electron current and thermal velocity components
- No discharge observed yet
 - Either a few electron microparticles are created in the simulation
 - Simulation is aborted due to memory limited being exceeded