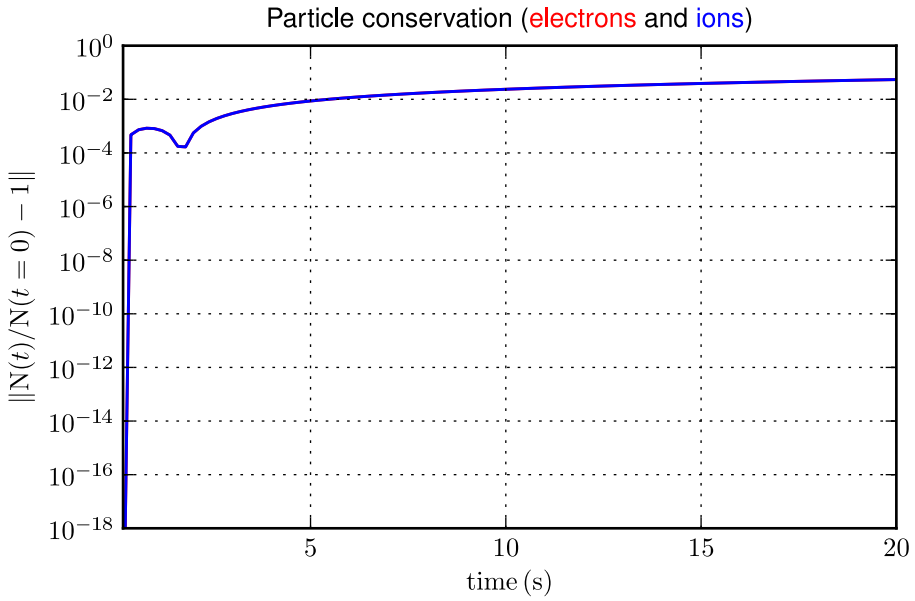
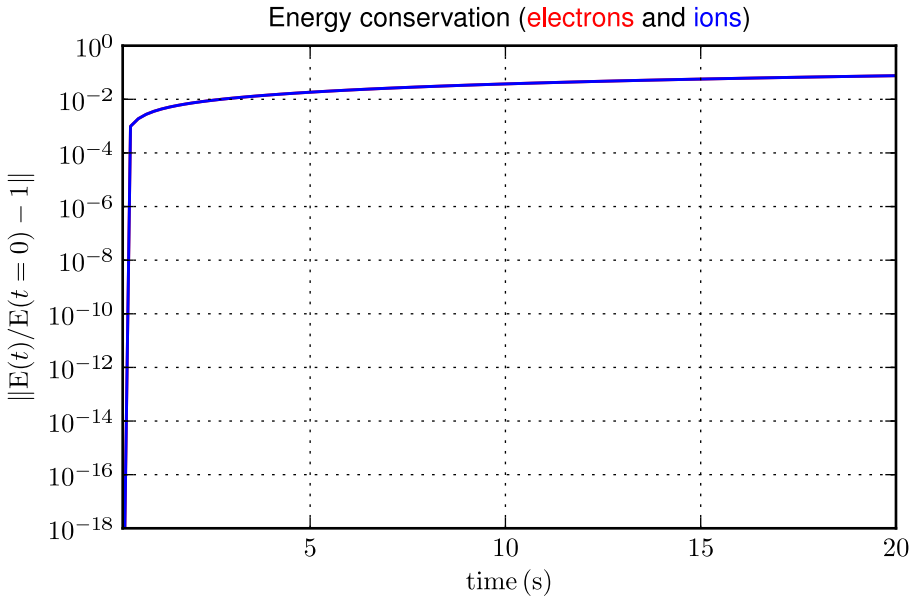
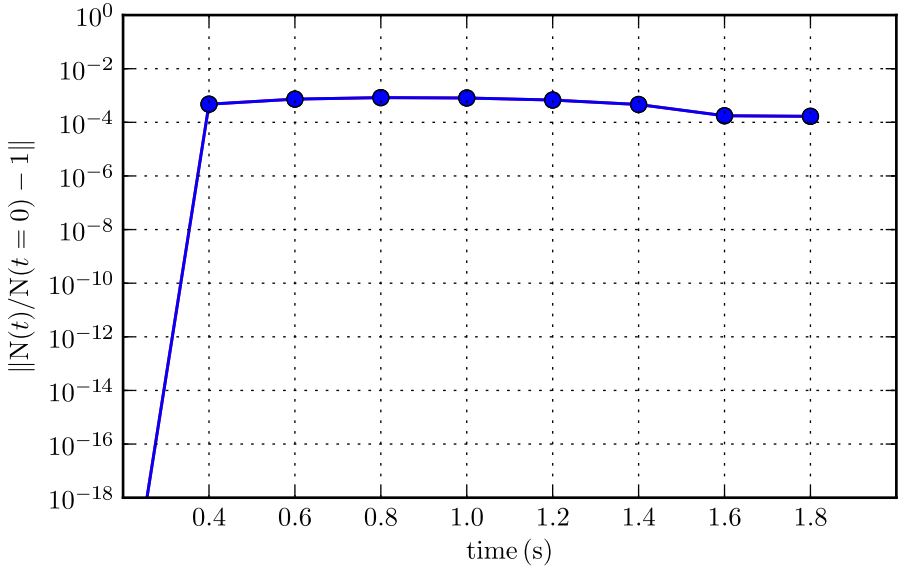
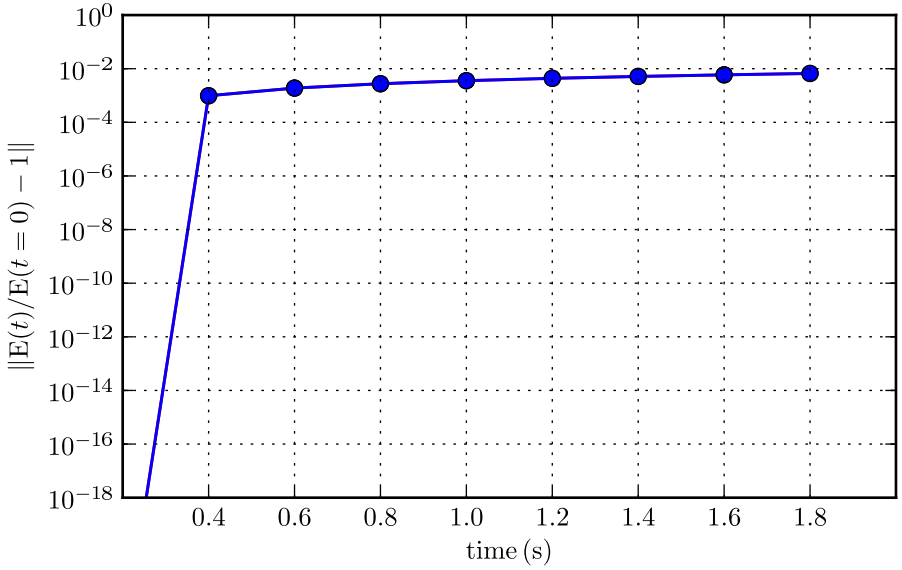
Part. & Energy conservation [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m}/\mathrm{s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Comparison with initial solution - log scale; total time and zoom over time



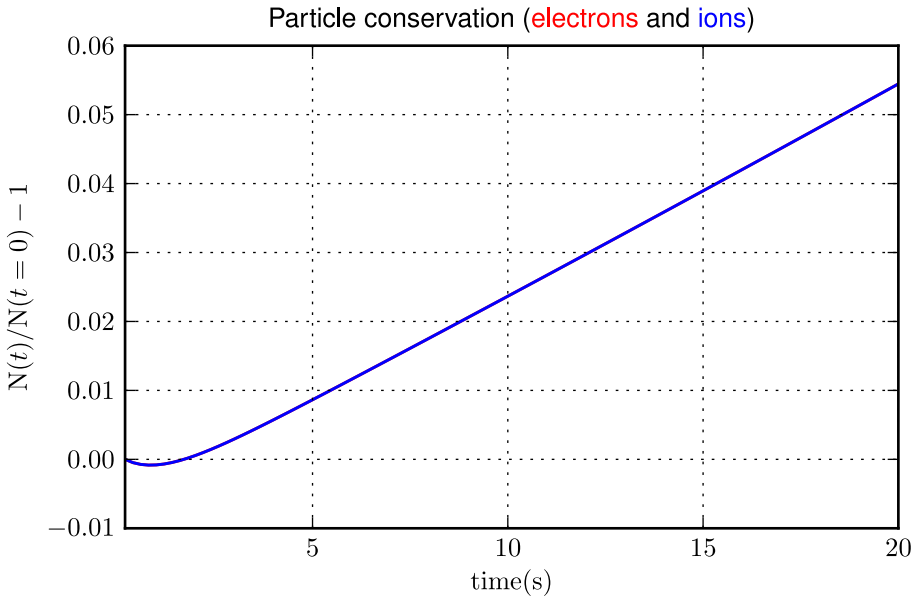


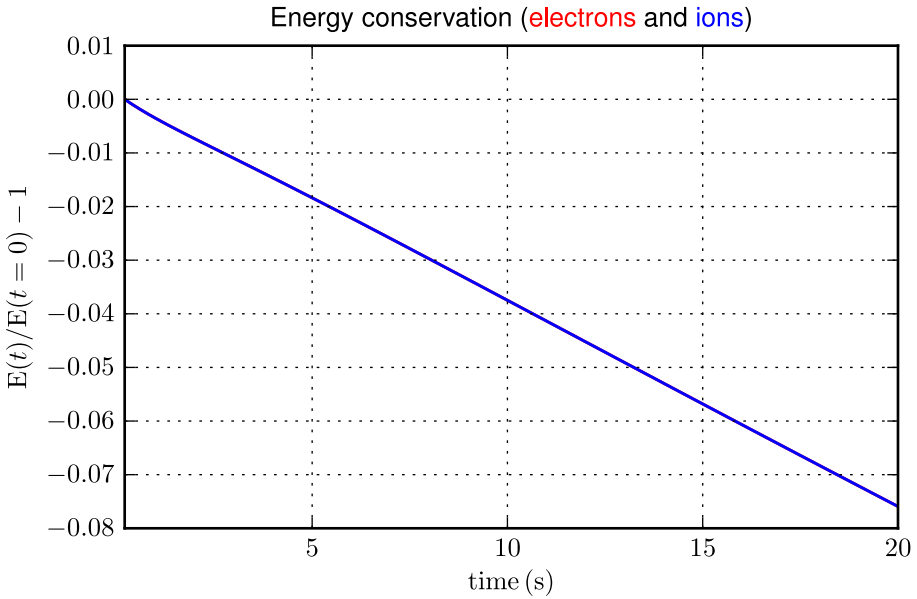


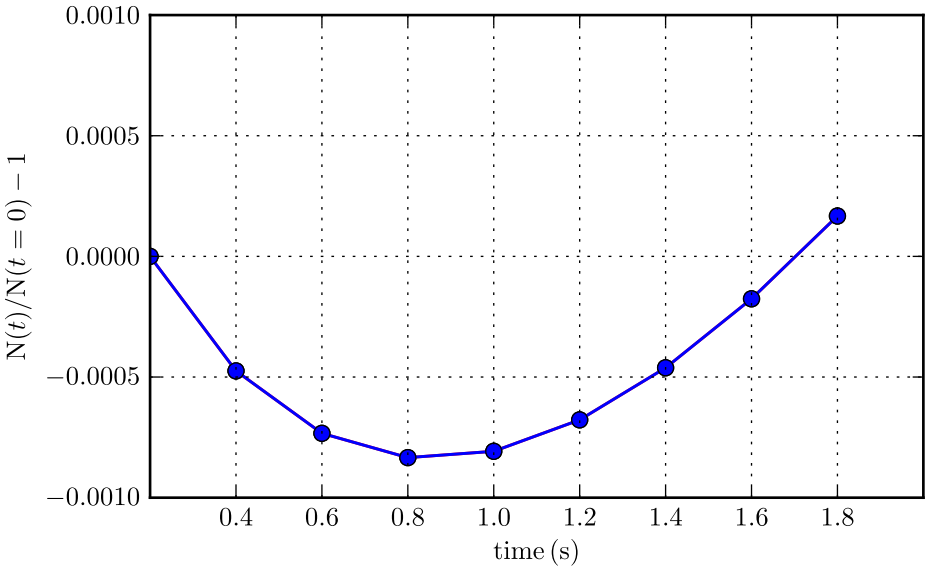


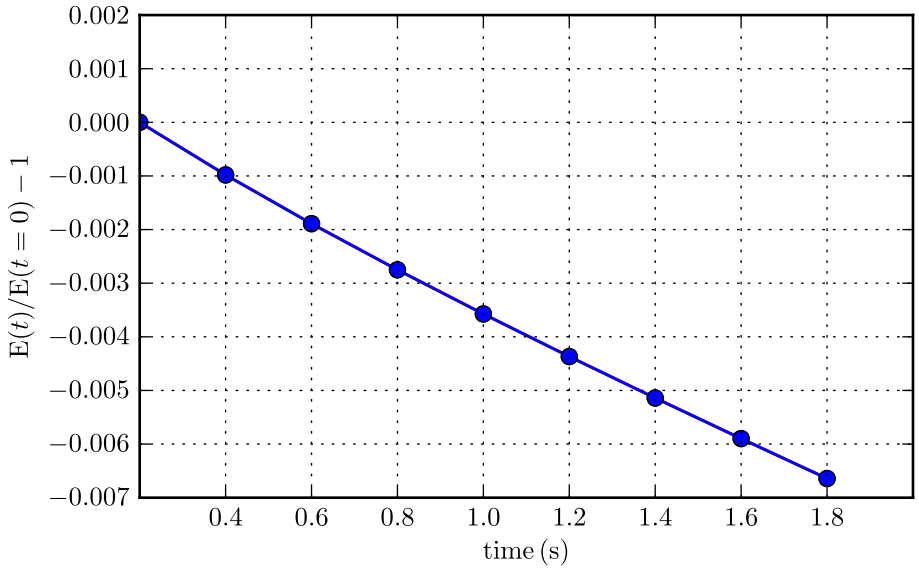
Part. & Energy conservation [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m}/\mathrm{s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Comparison with initial solution - linear scale; total time and zoom over time



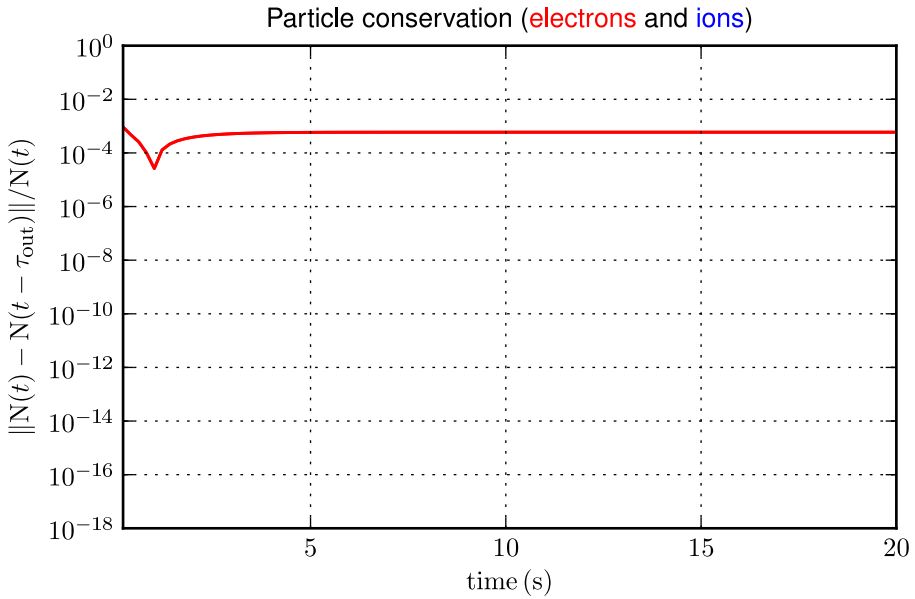


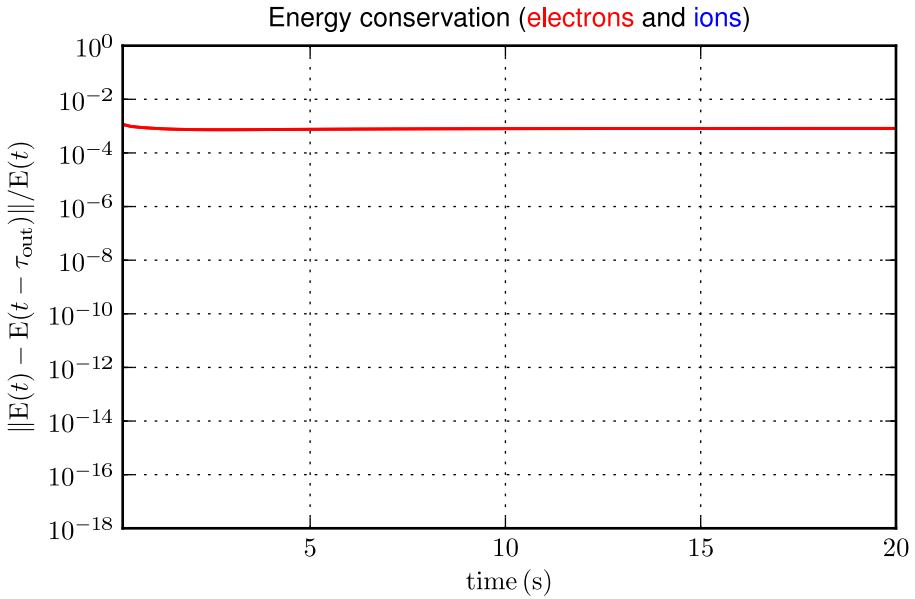


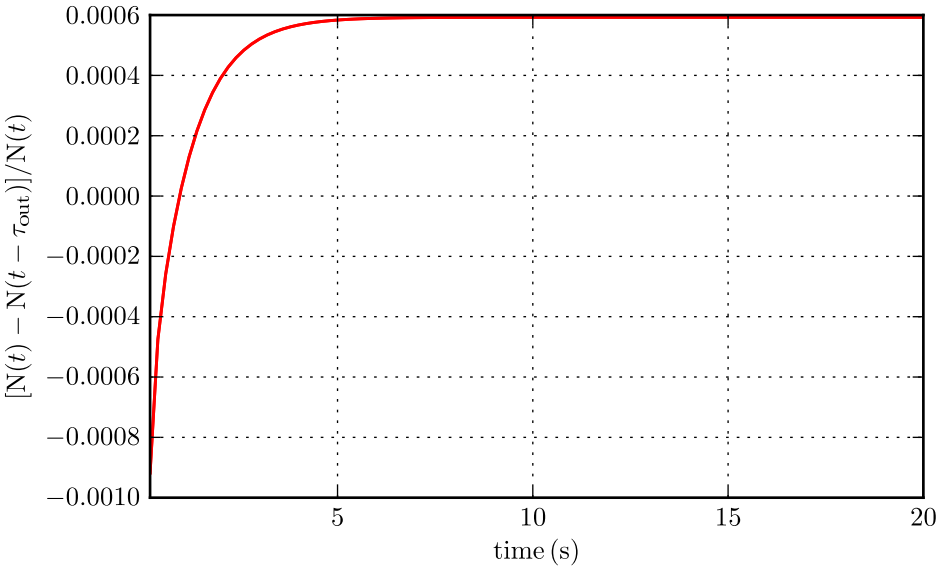


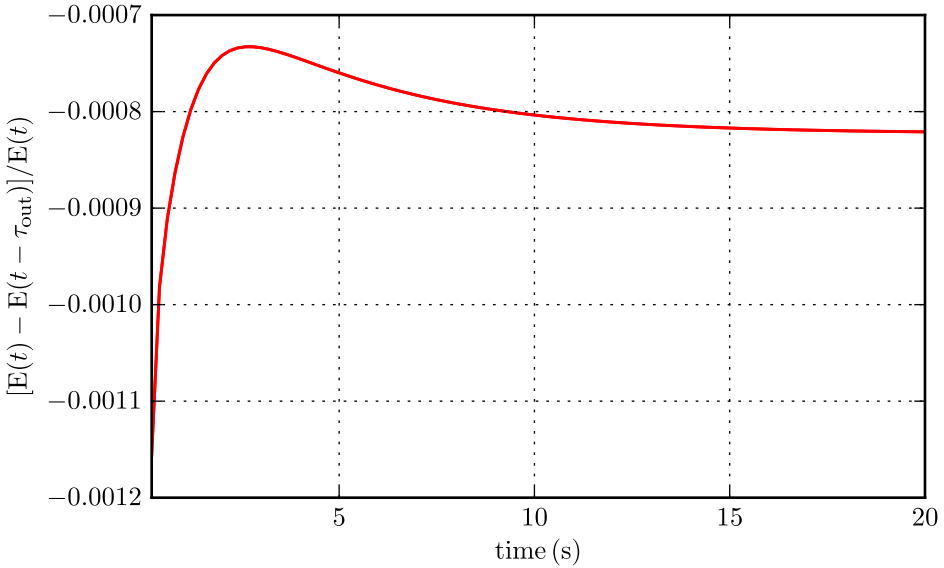
Part. & Energy conservation [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Comparison with previous time-sampled (τ_{out}) solution - log and linear scales



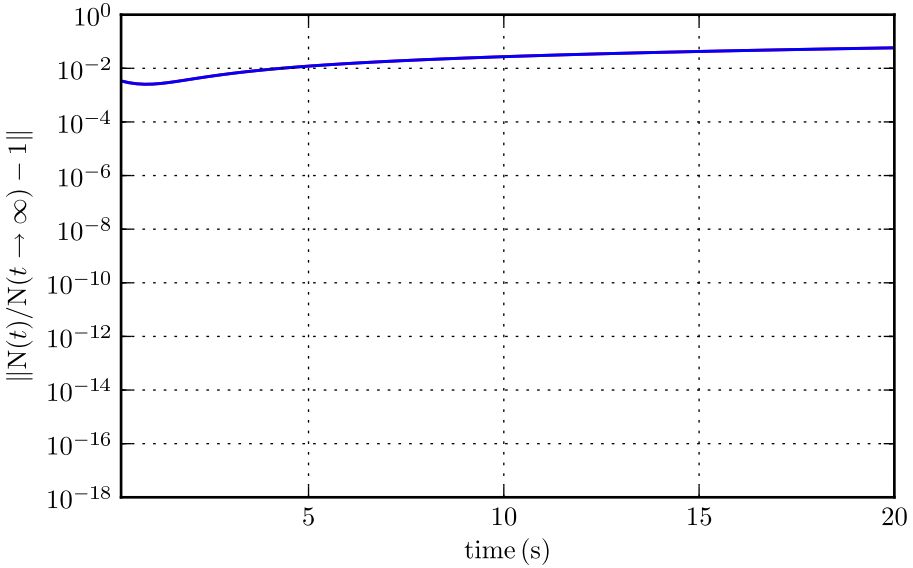


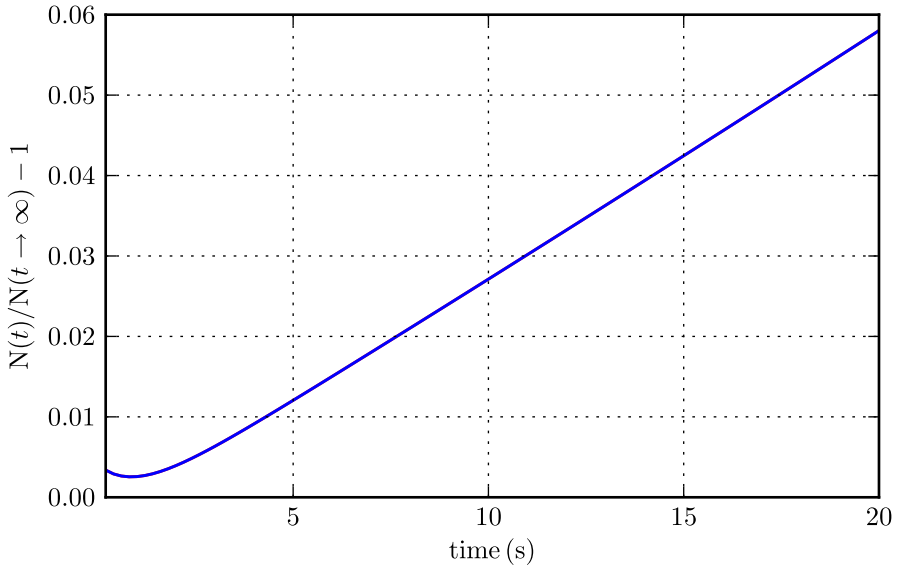


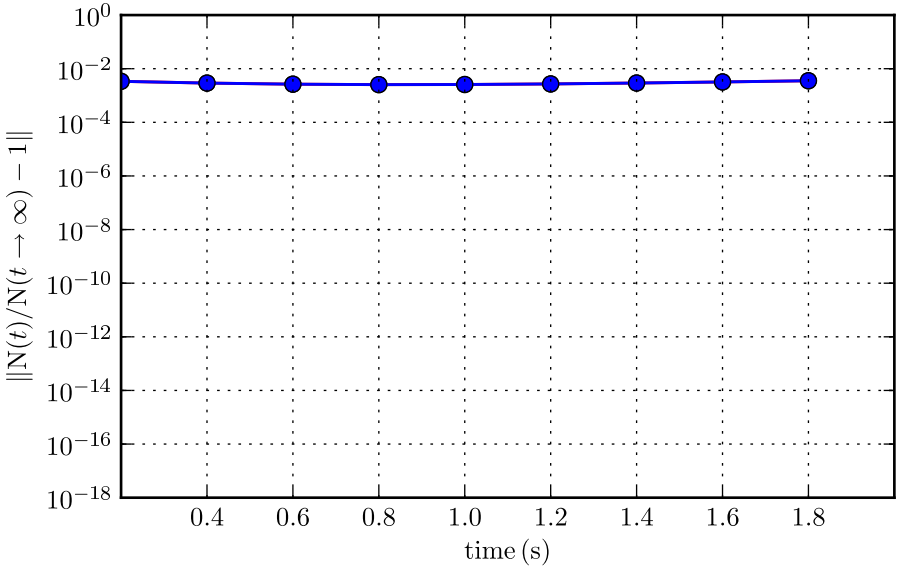


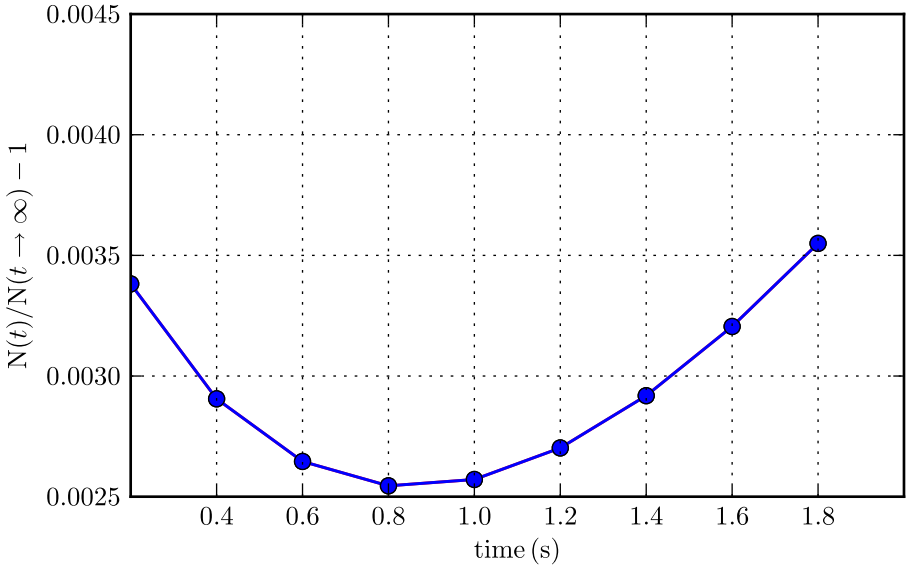
Particle conservation [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Comparison with asymptotic solution (electrons and ions); total time and zoom over time



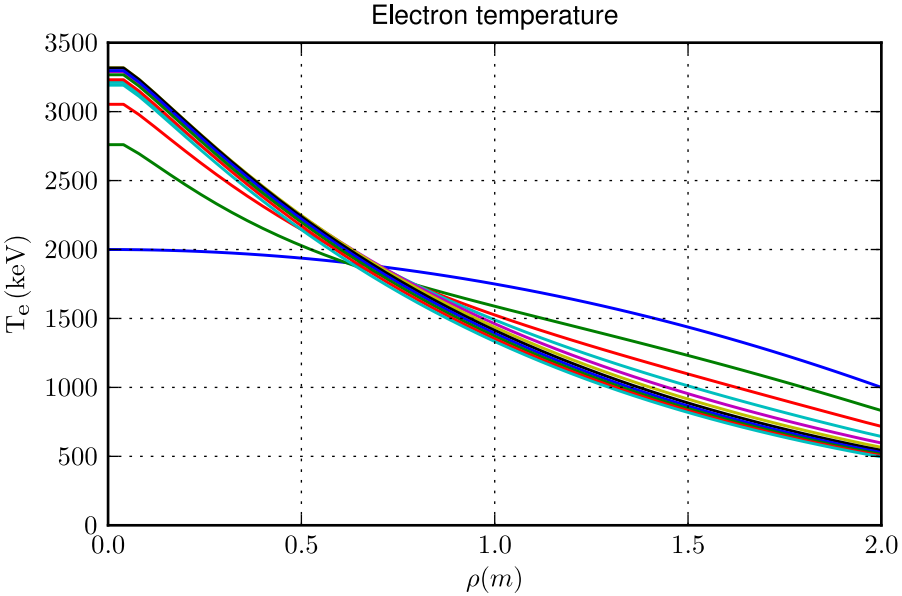


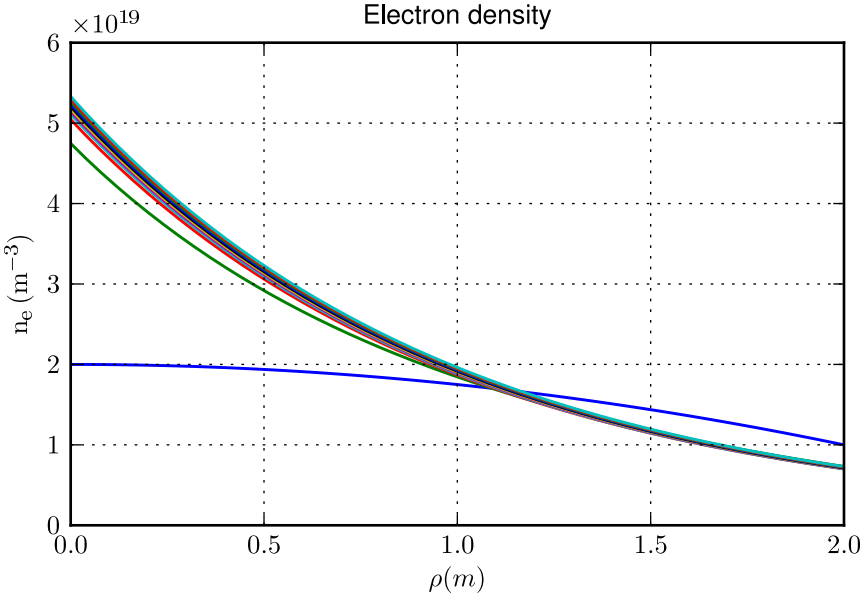


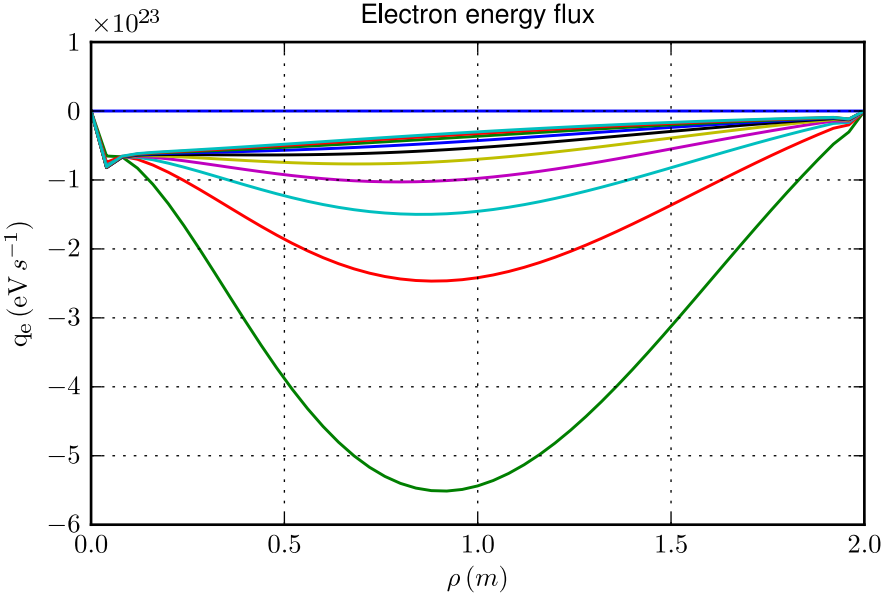


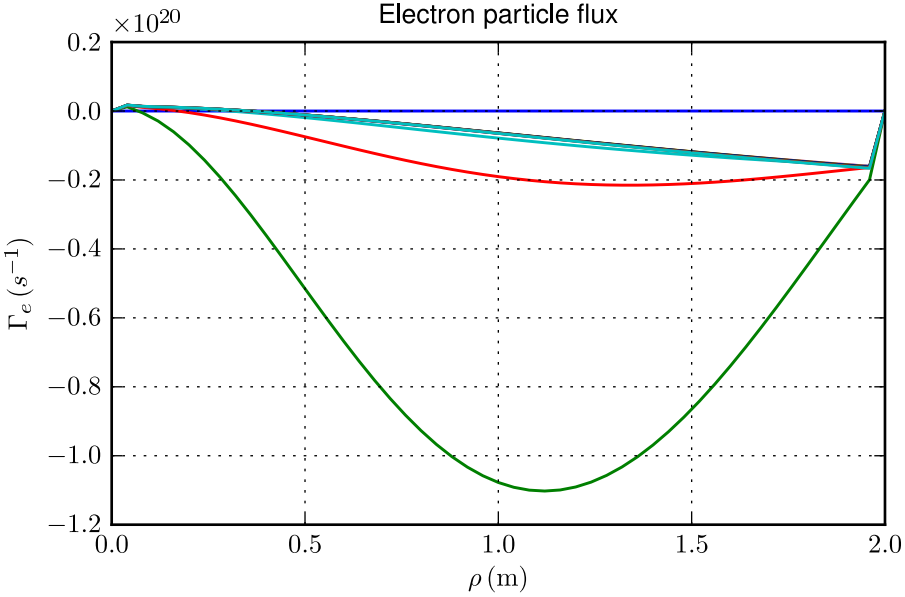
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Time sampling: total simulation time/10





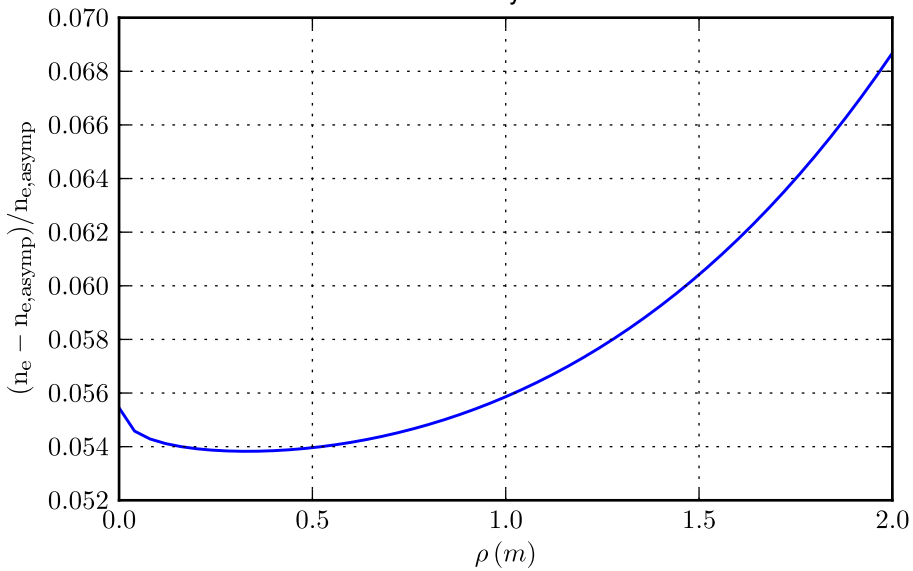




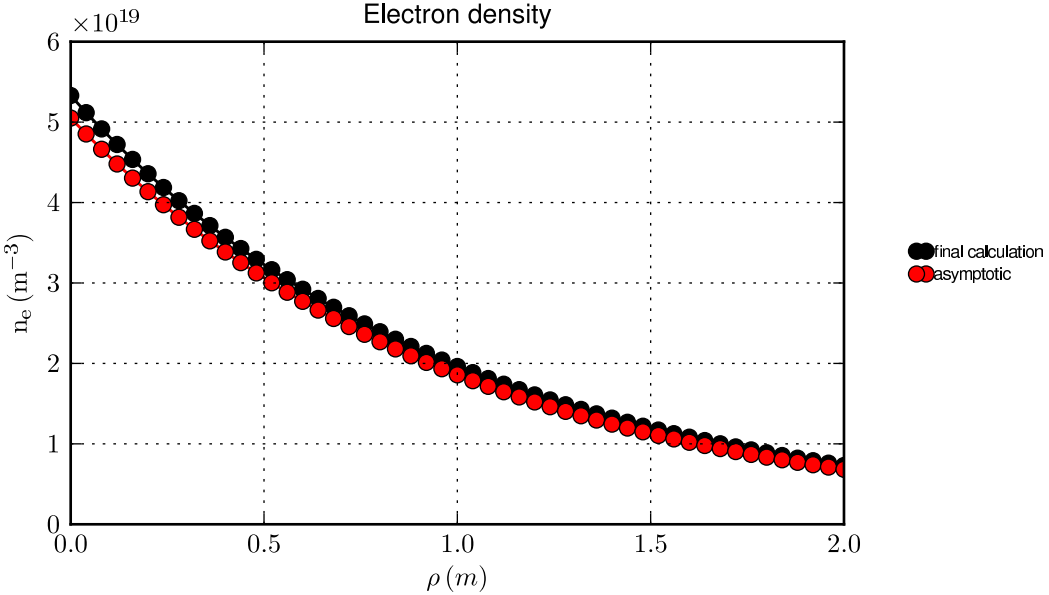
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m}/\mathrm{s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Comparison with asymptotic solution

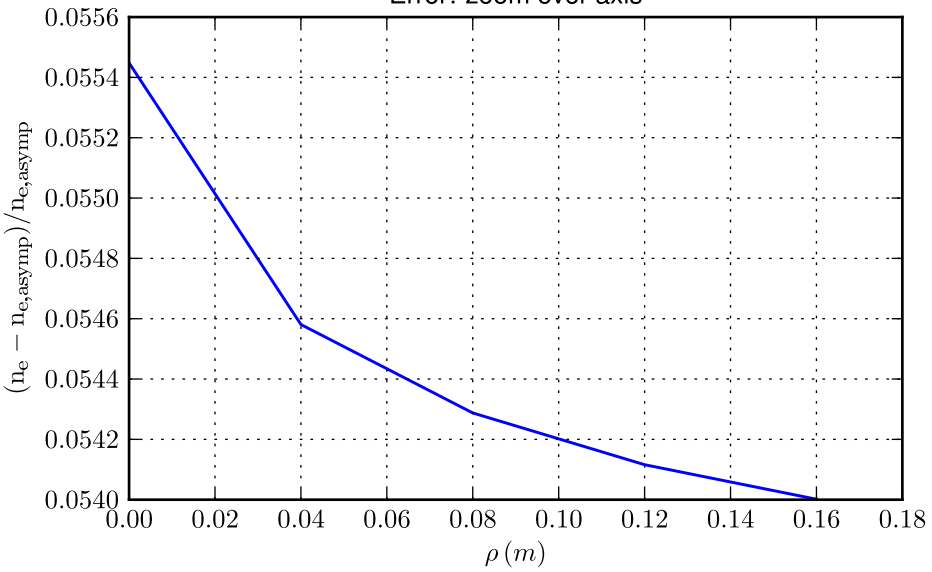
Electron density relative error



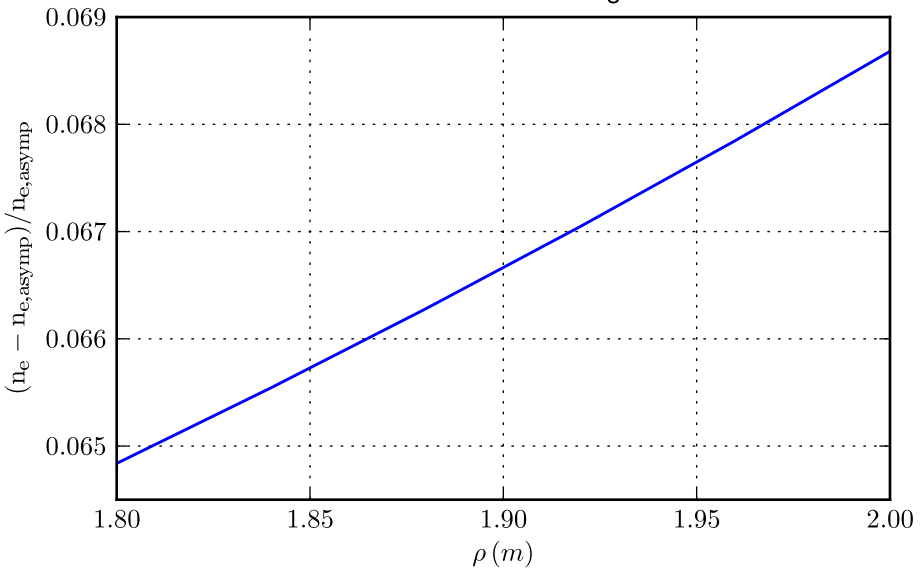
Electron density



Error: zoom over axis

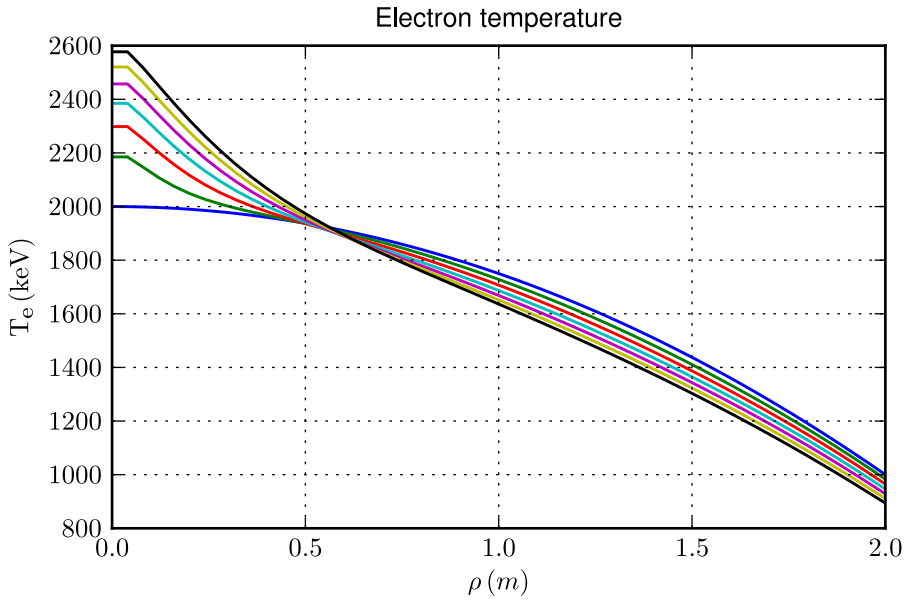


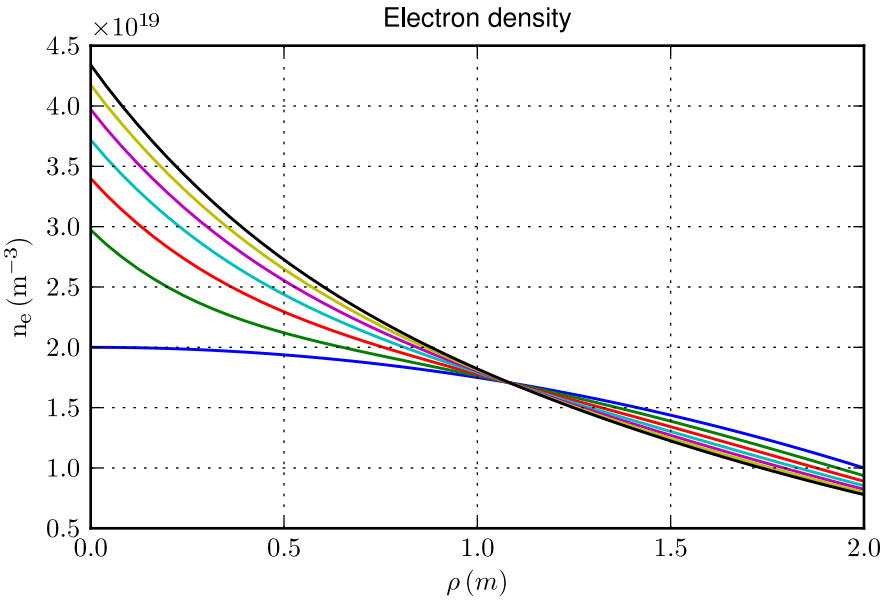
Error: zoom over edge

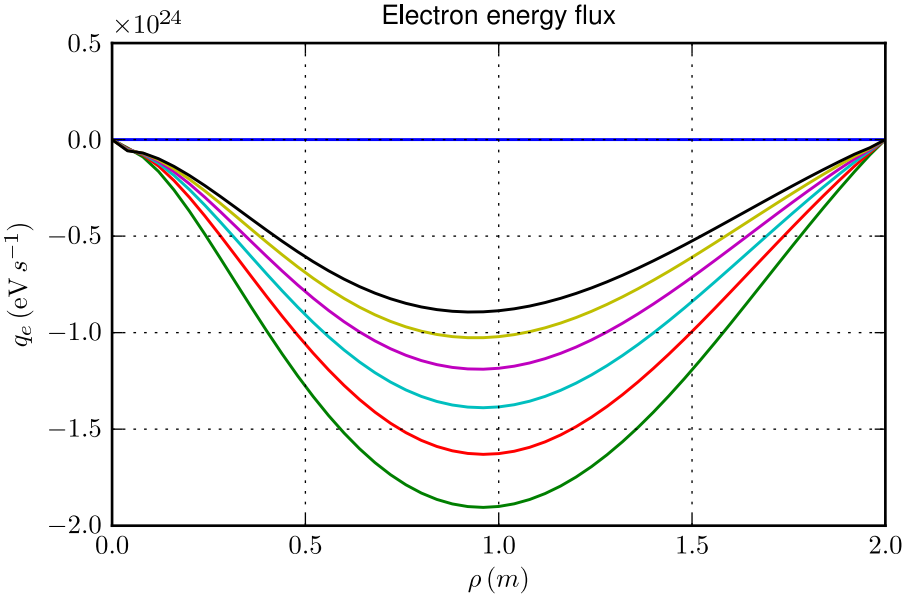


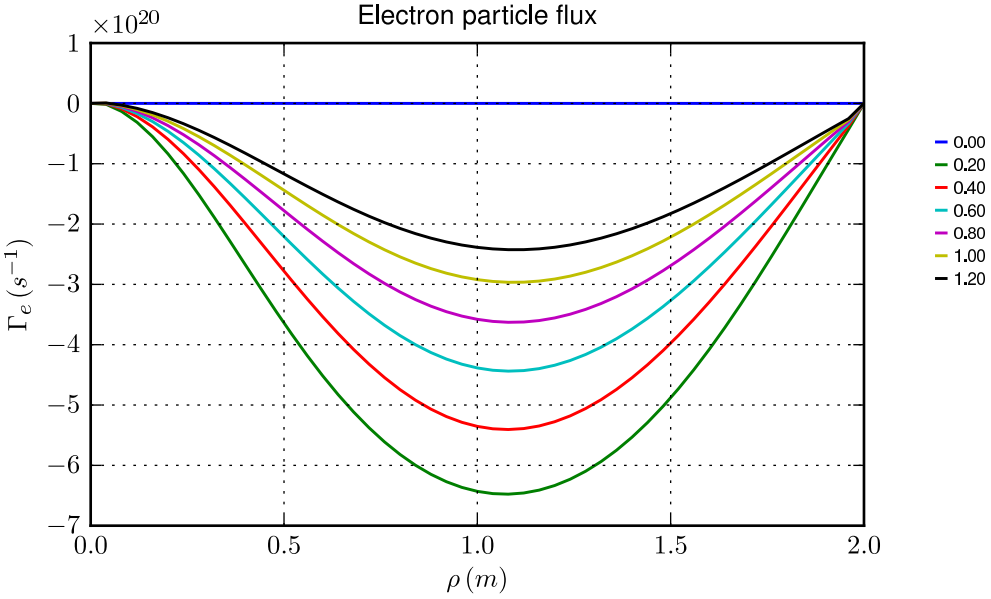
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)|$ =1.33 s



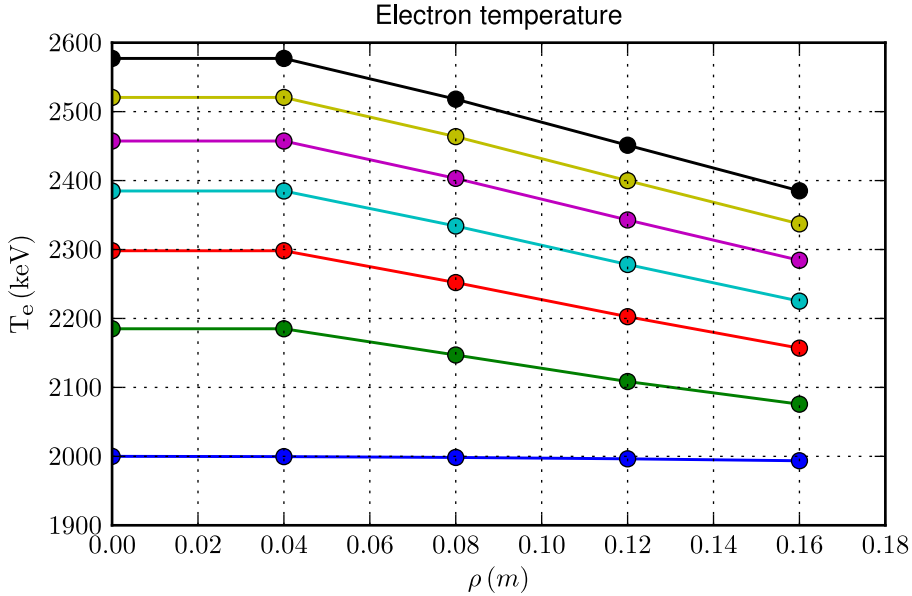


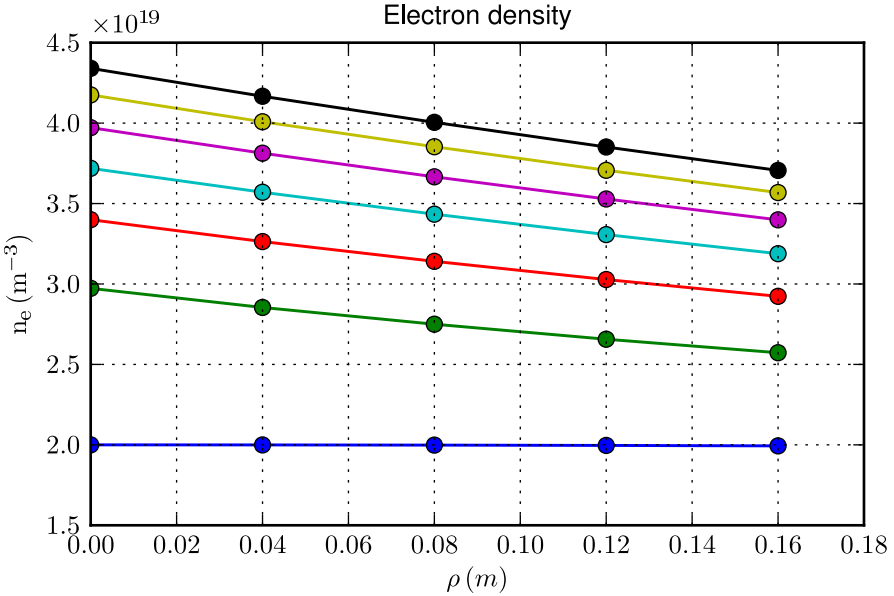


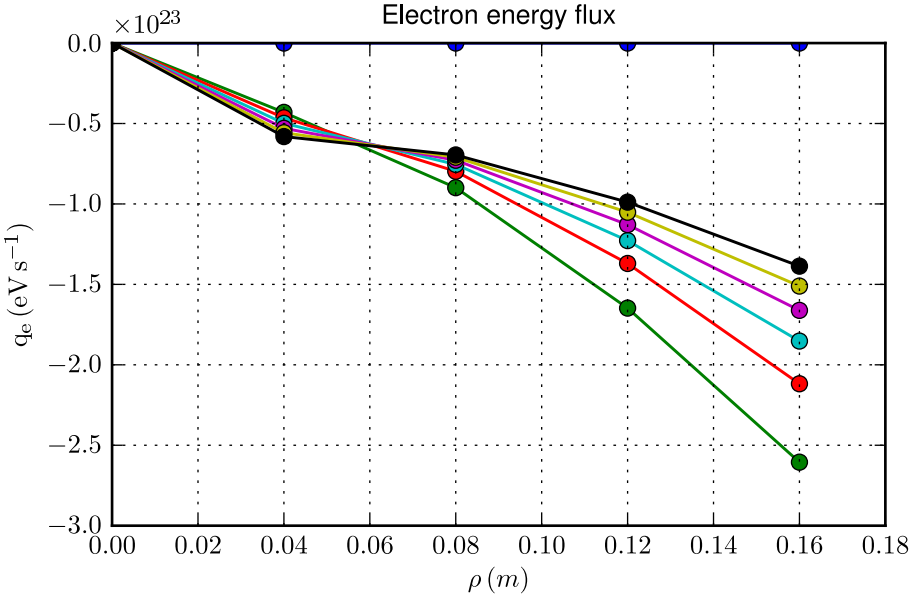


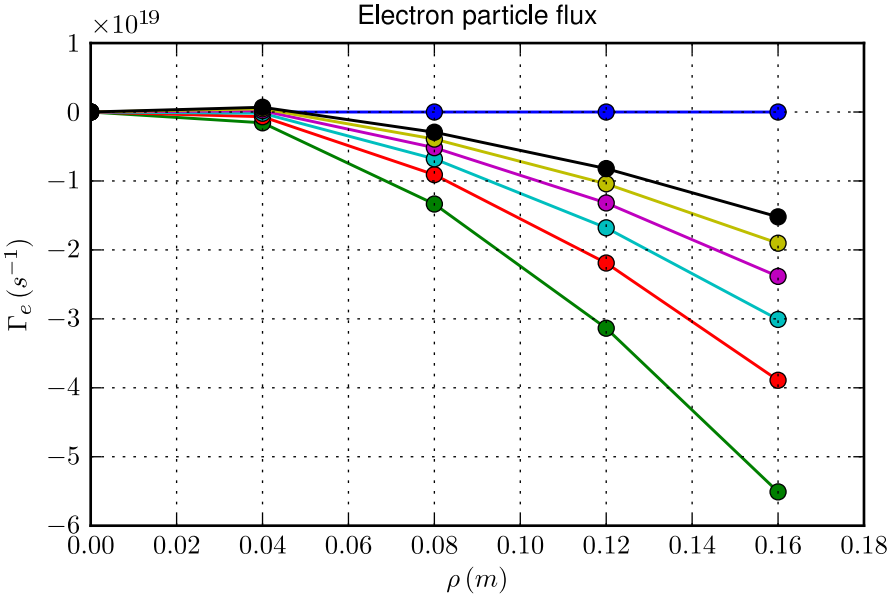
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Spatial zoom over magnetic axis; time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)|$ =1.33 s



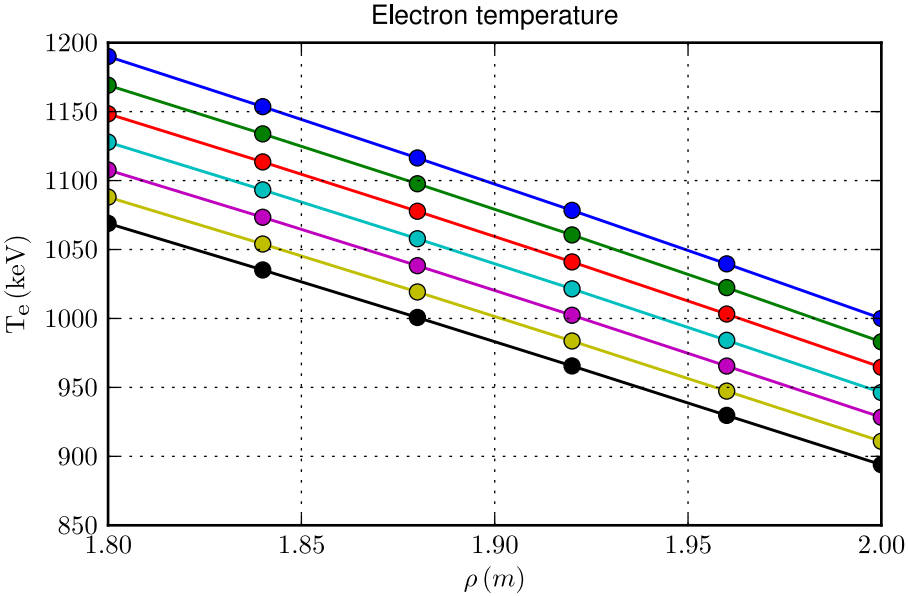


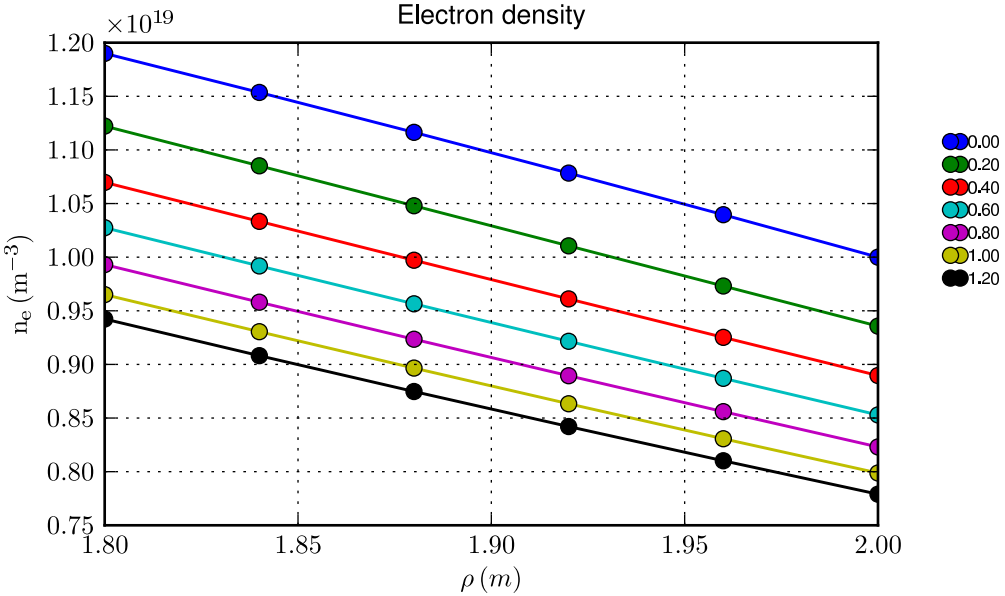


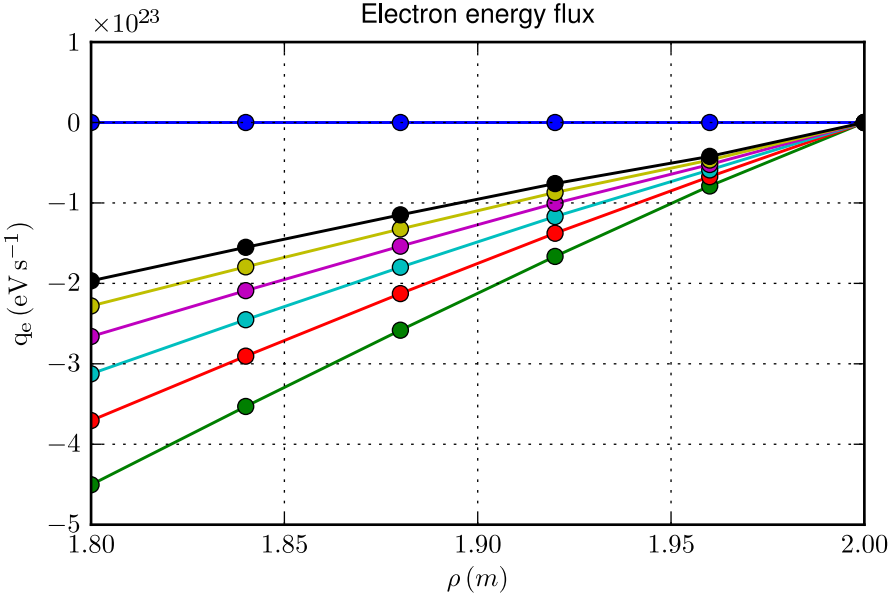


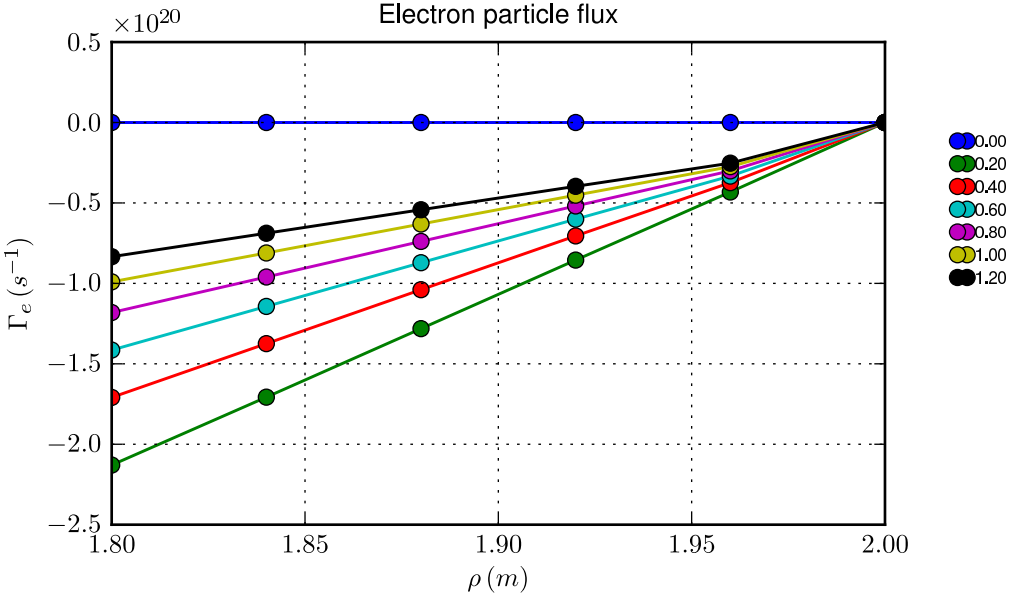
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Spatial zoom over edge; time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)|$ =1.33 s



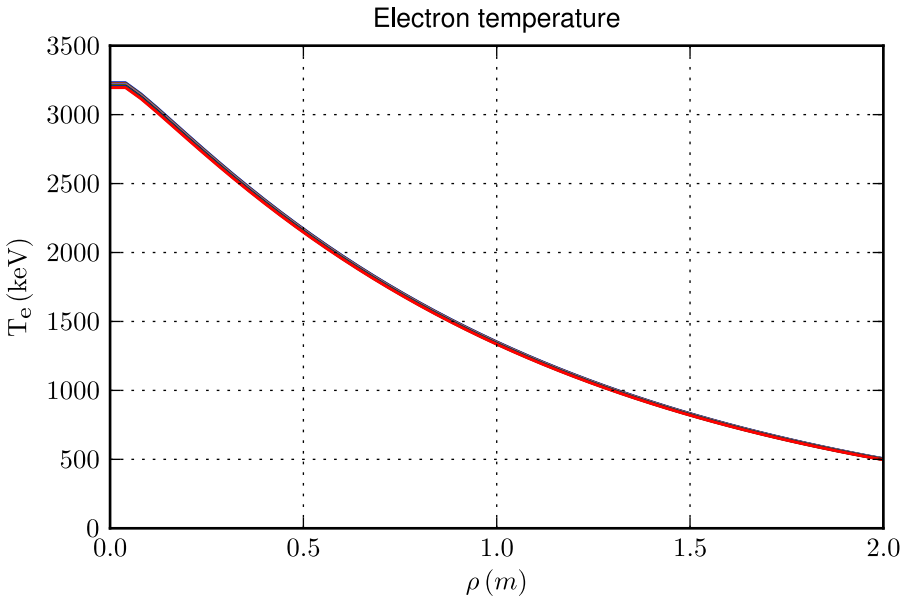


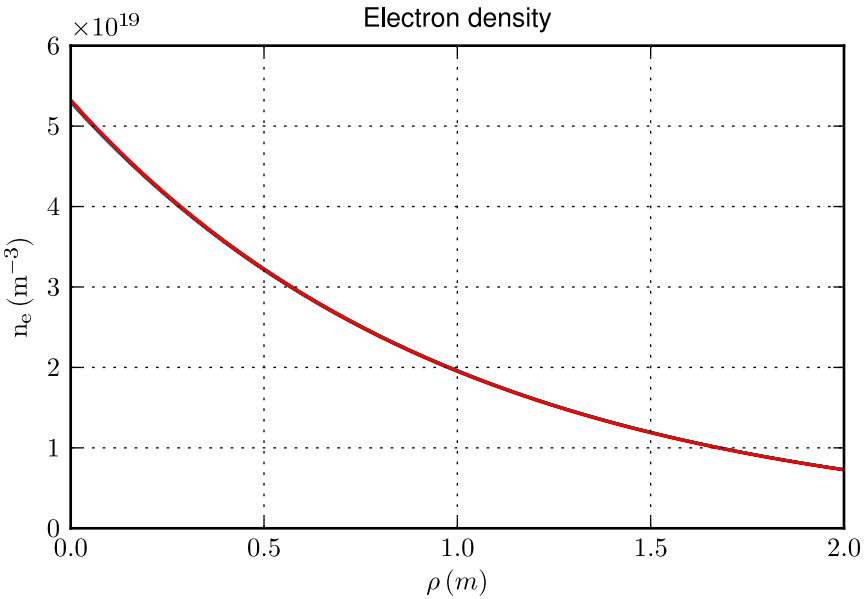


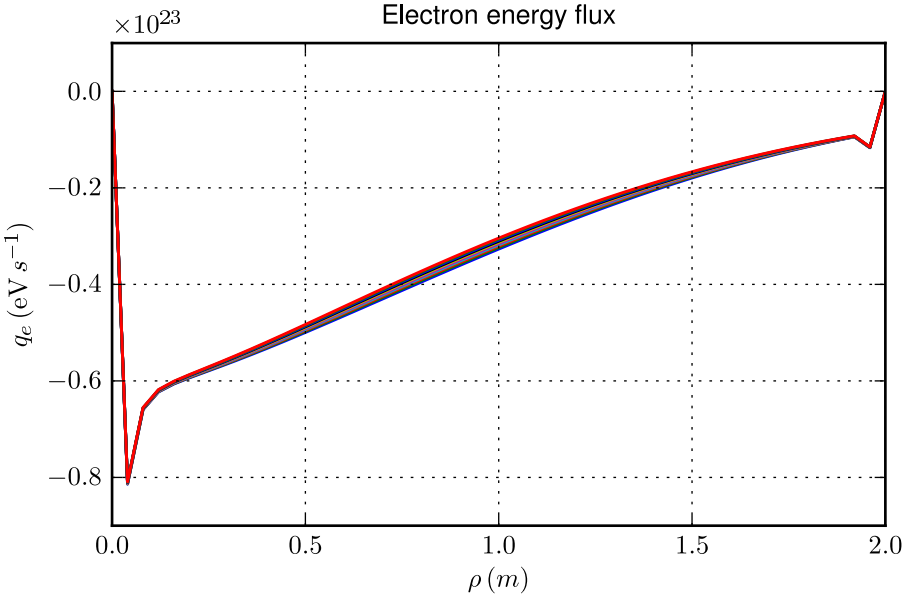


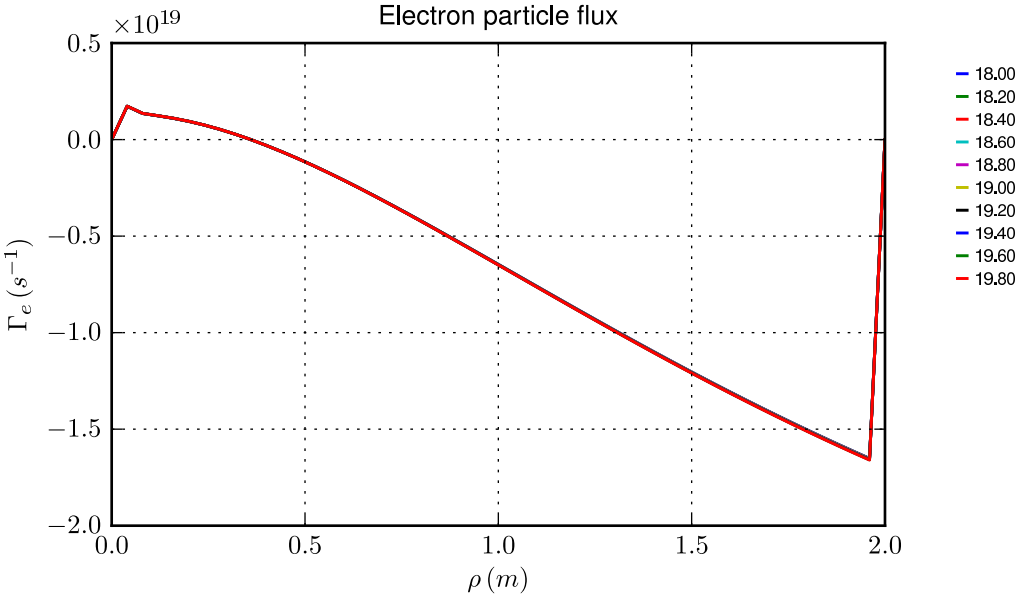
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m}/\mathrm{s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Time sampling: last 10 time slices



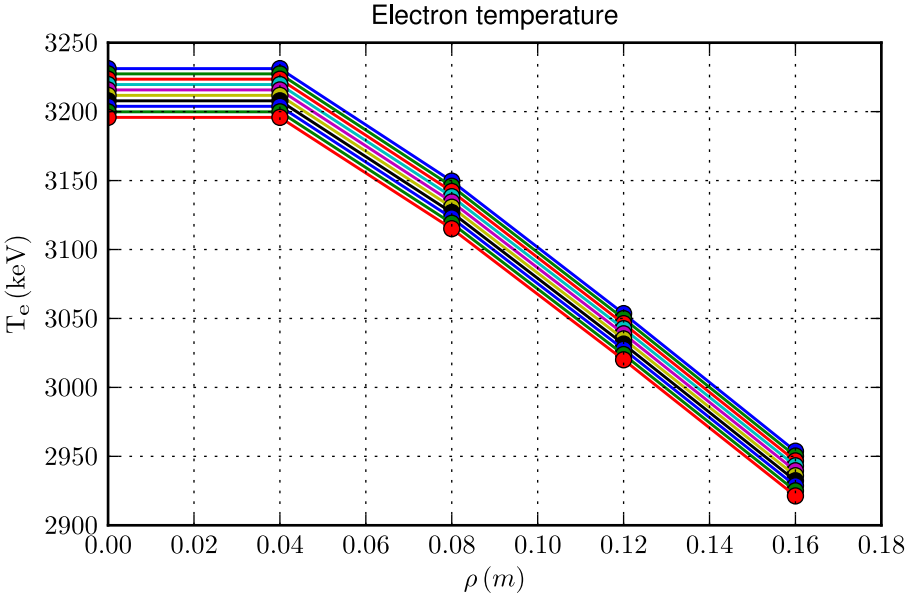


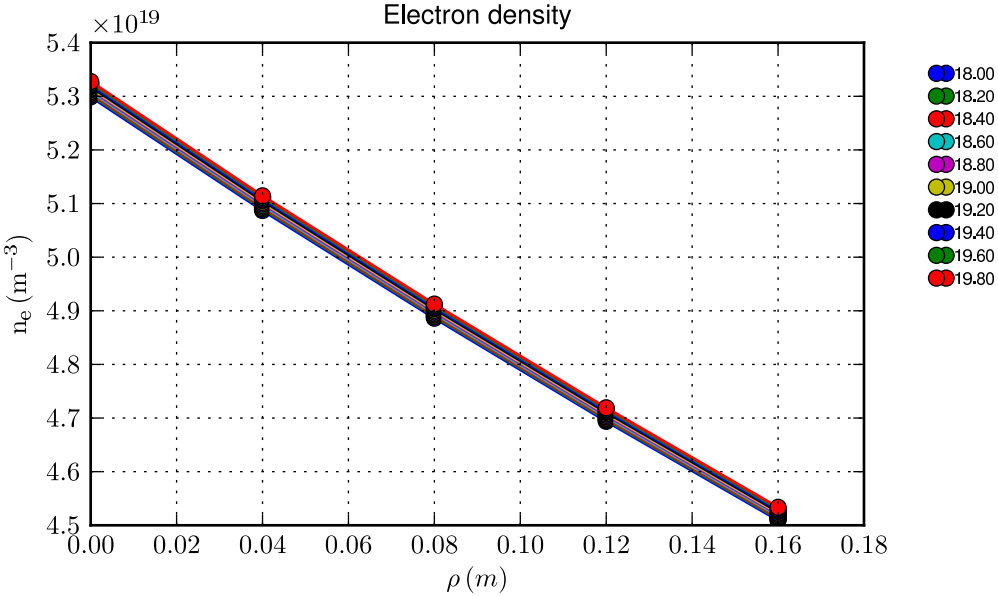


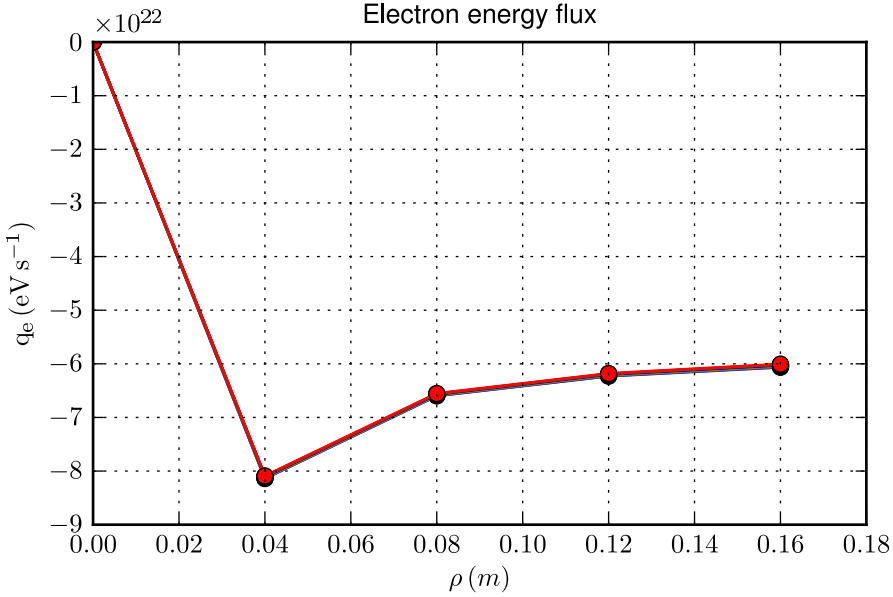


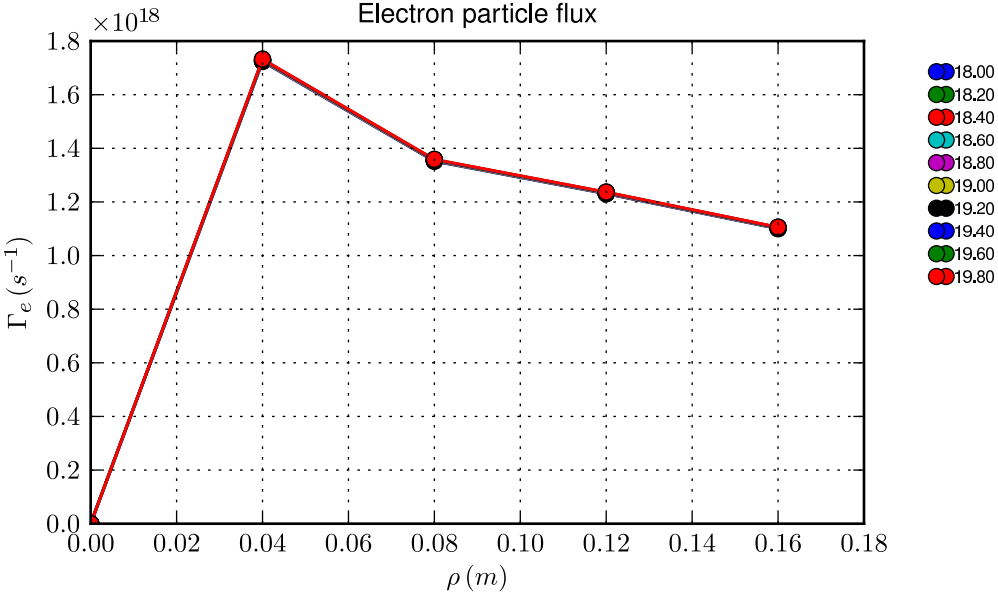
Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Spatial zoom over magnetic axis; time sampling: last 10 time slices









Profiles [Case: I.1.5.h, Solver: 3, $D = 0.1\,\mathrm{m}^2/\mathrm{s}$, $v = -0.10\,\mathrm{m/s}$, Δt = 20.00, $\tau = 1.0 \times 10^{-3}\,\mathrm{s}$, $N_\rho = 51$]

Spatial zoom over edge; time sampling: last 10 time slices