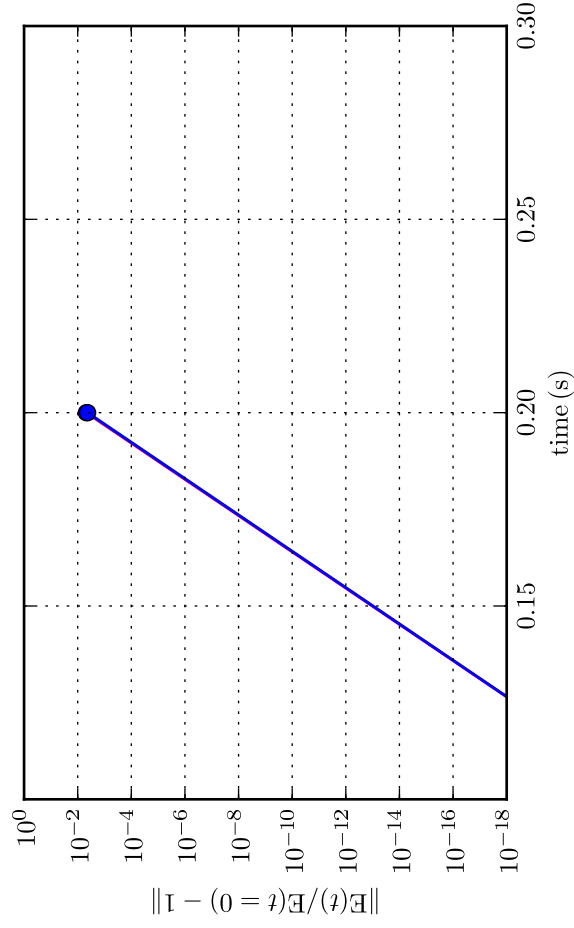
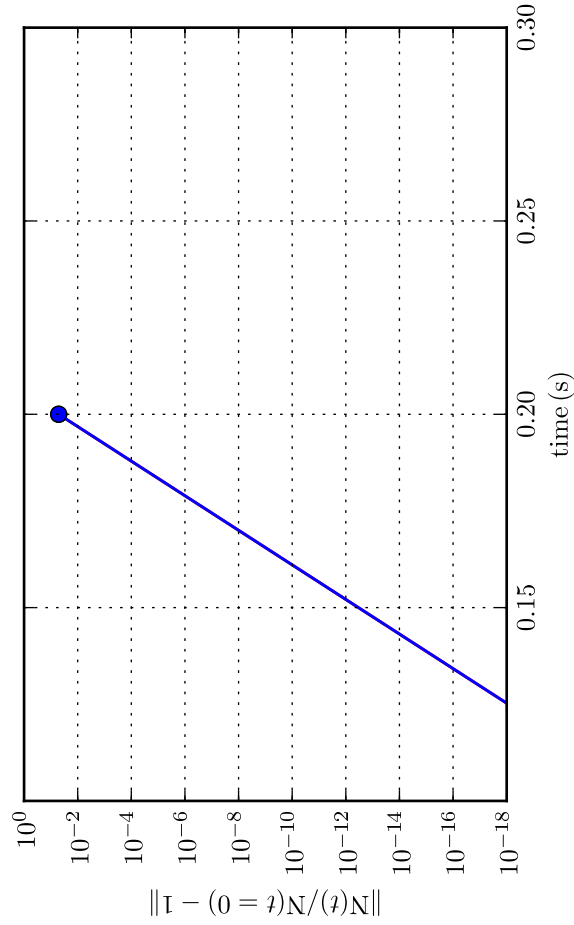
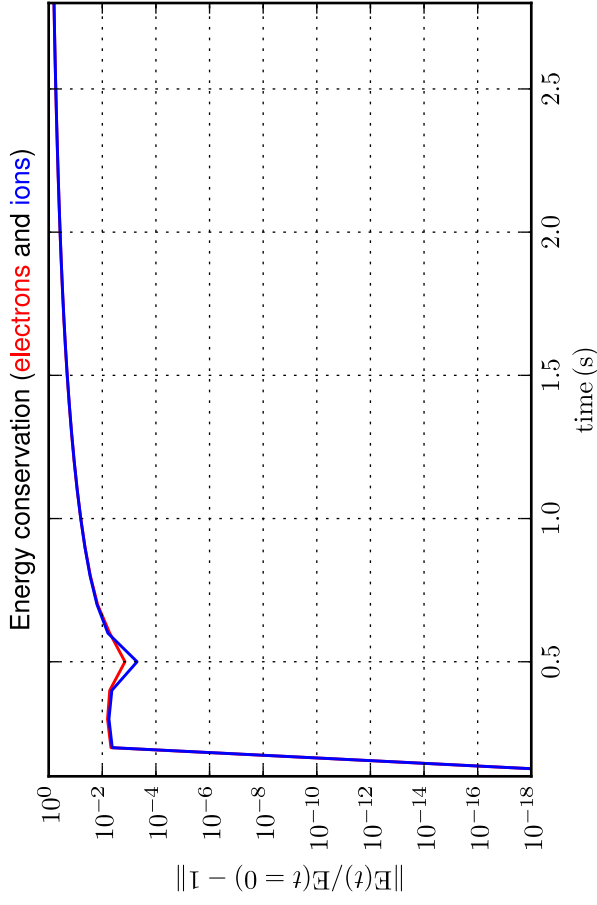
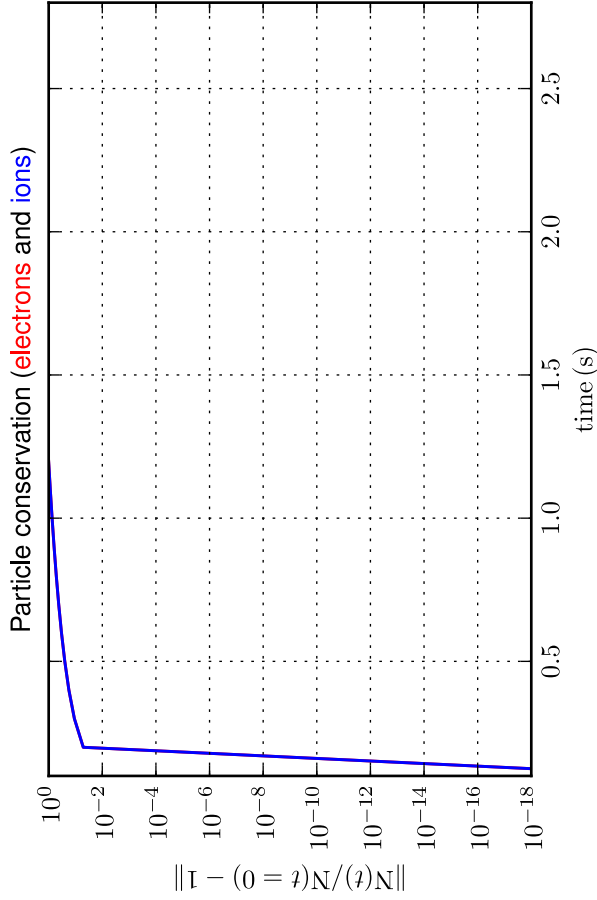


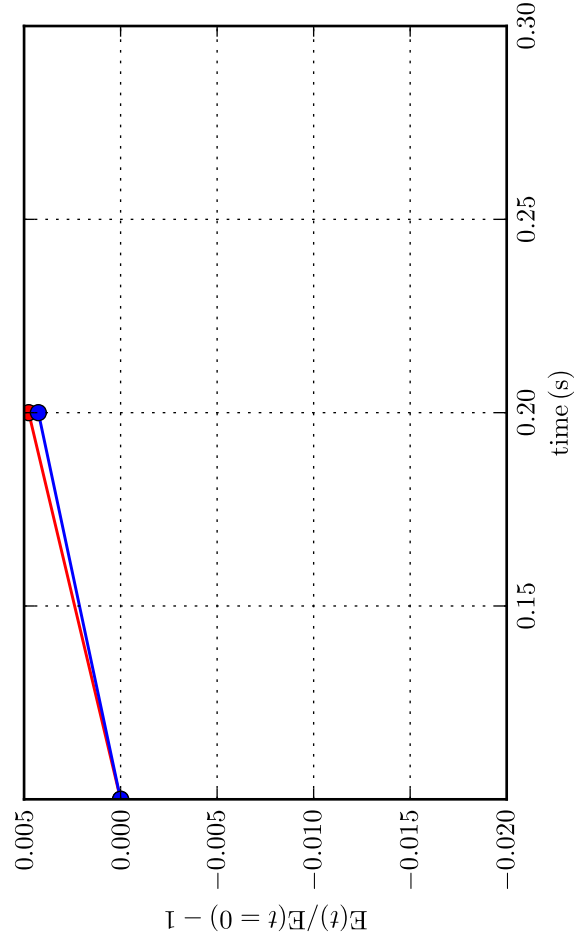
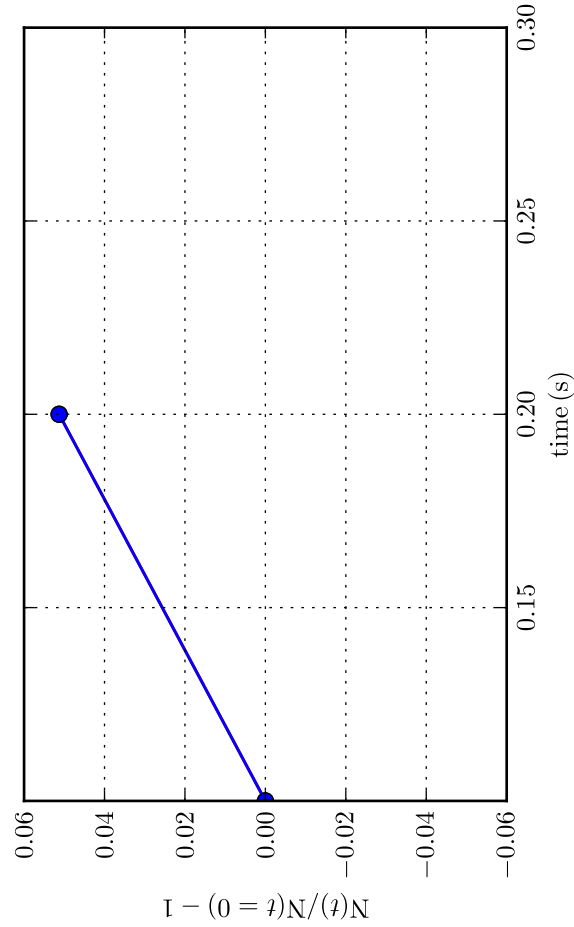
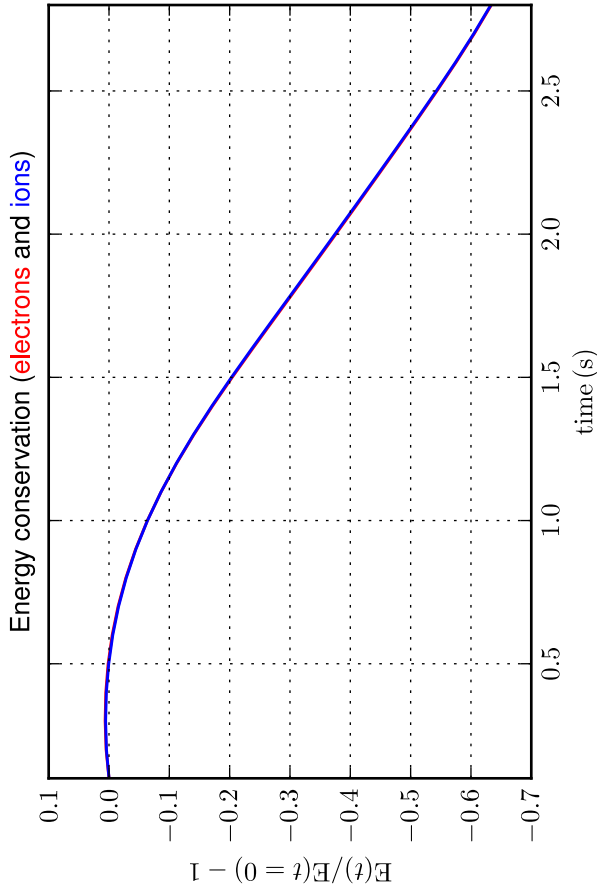
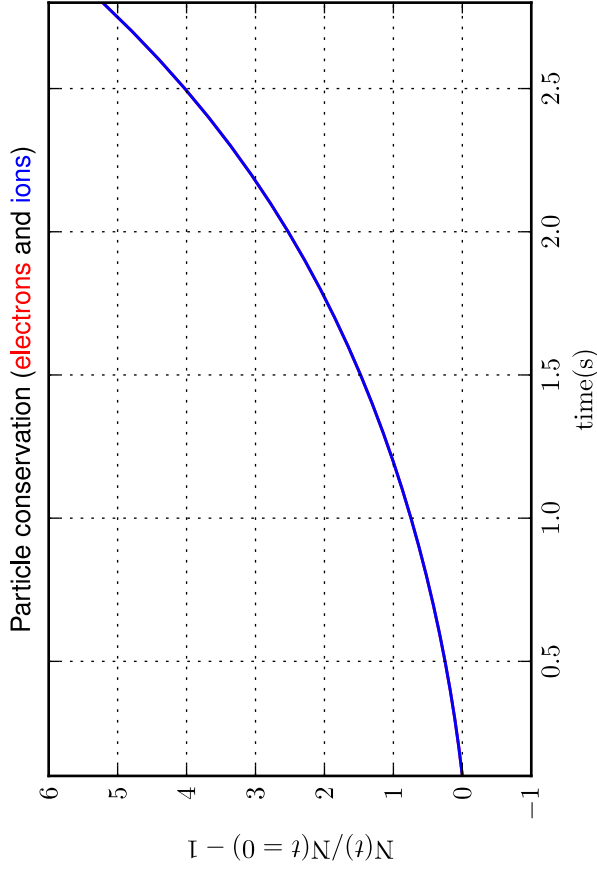
Part. & Energy conservation [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_p = 51$]

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

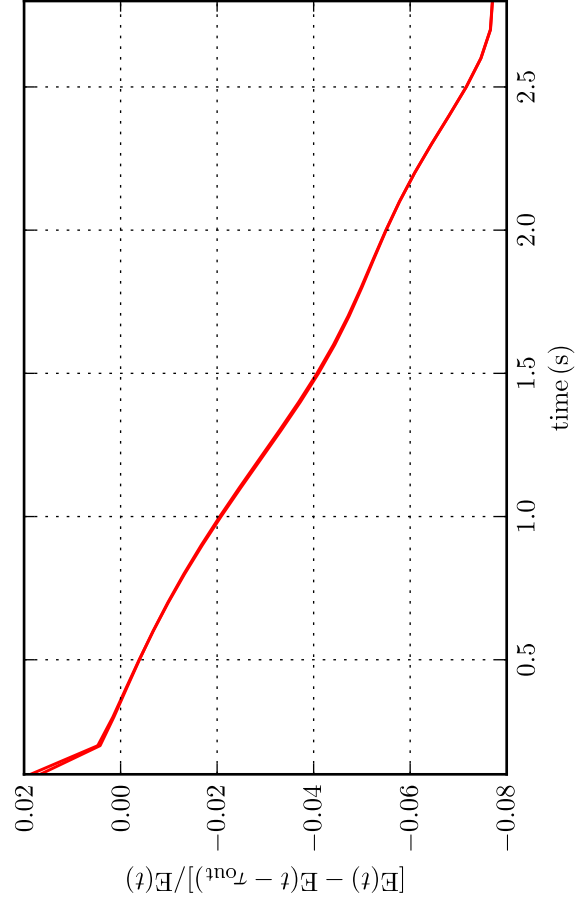
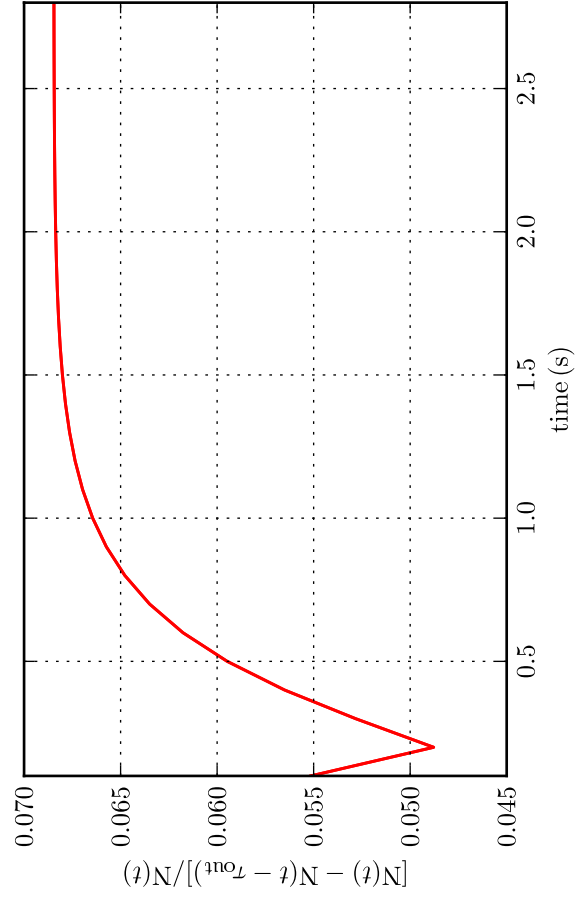
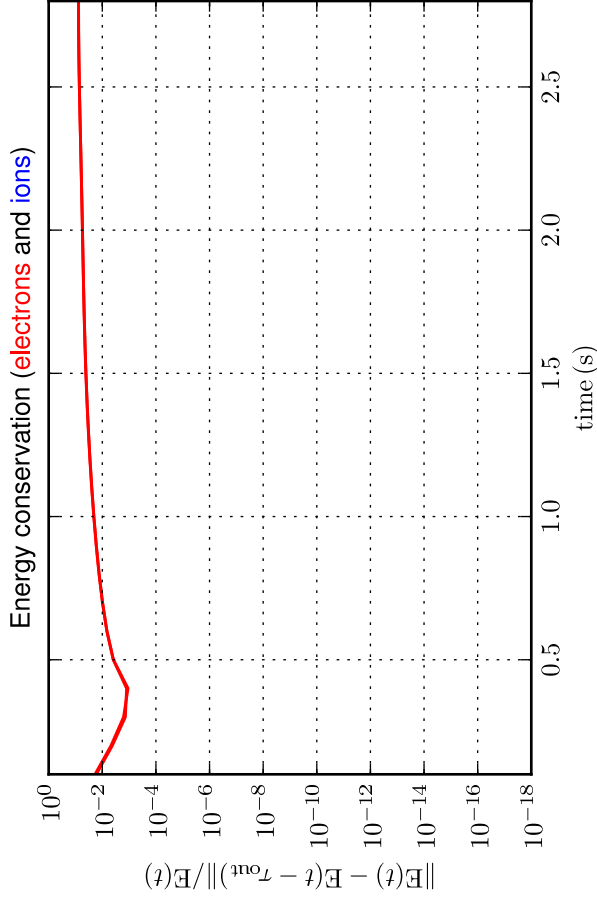
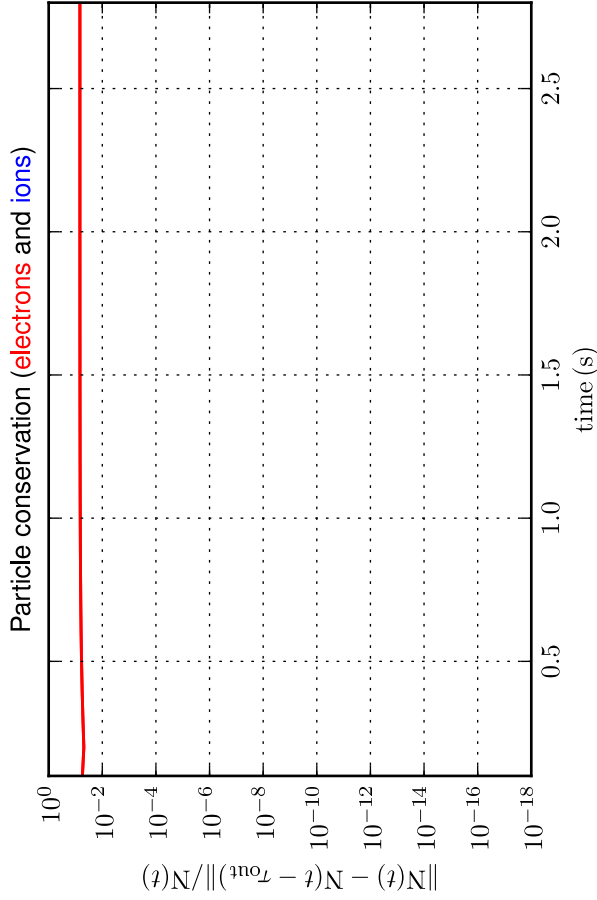


Part. & Energy conservation [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_p = 51$]

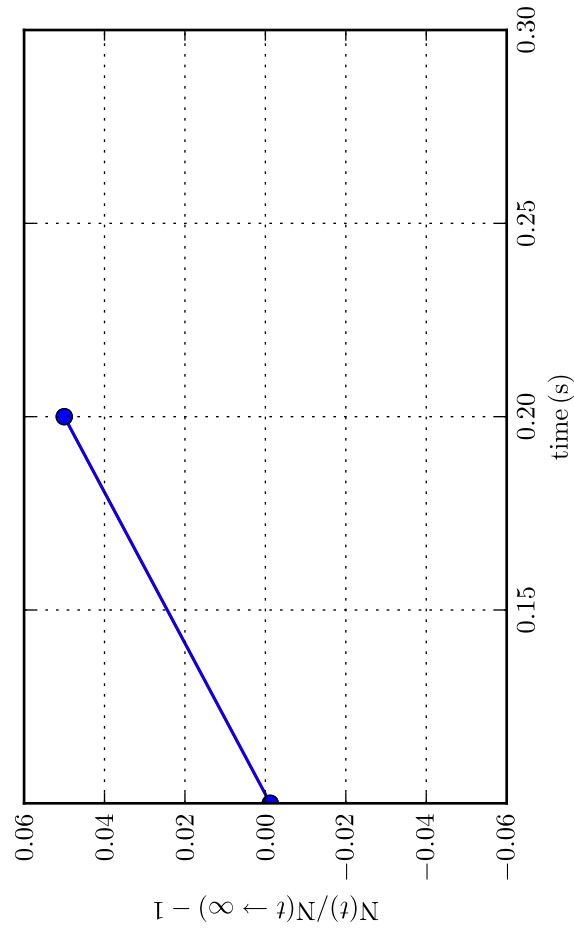
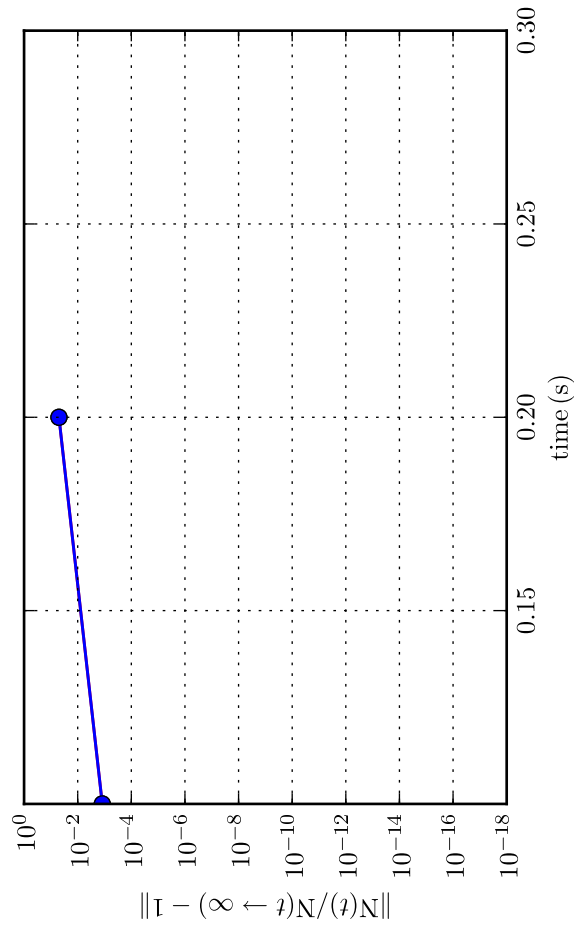
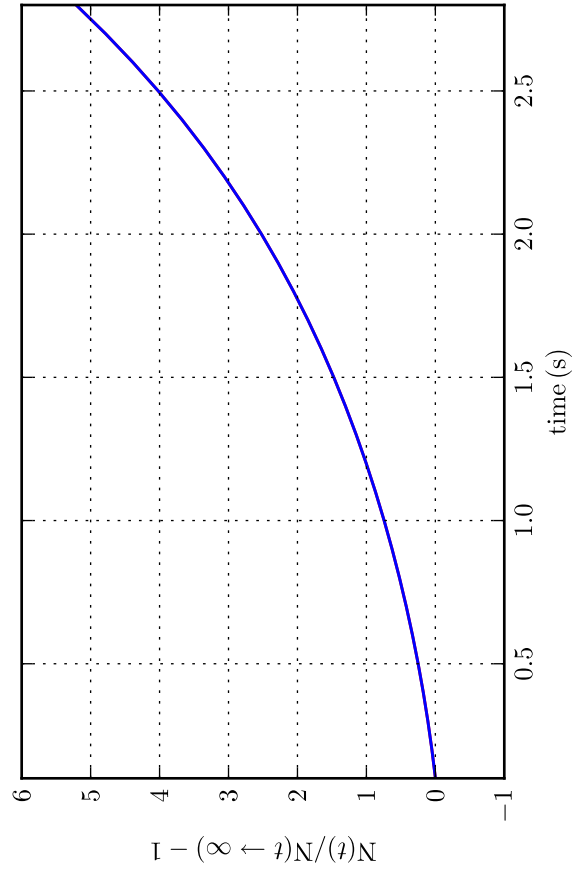
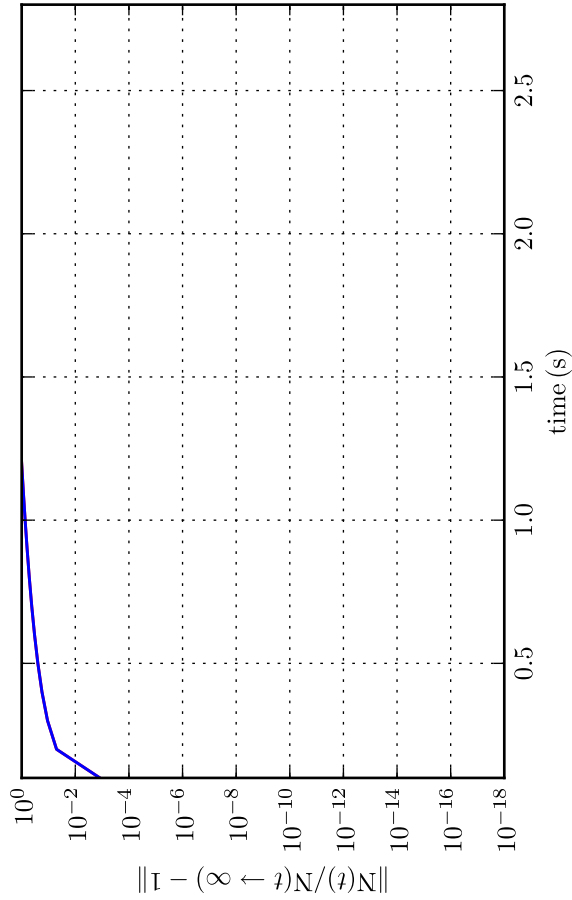
Comparison with initial solution - linear scale; total time and zoom over time



Part. & Energy conservation [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_p = 51$]
 Comparison with previous time-sampled (τ_{out}) solution - log and linear scales



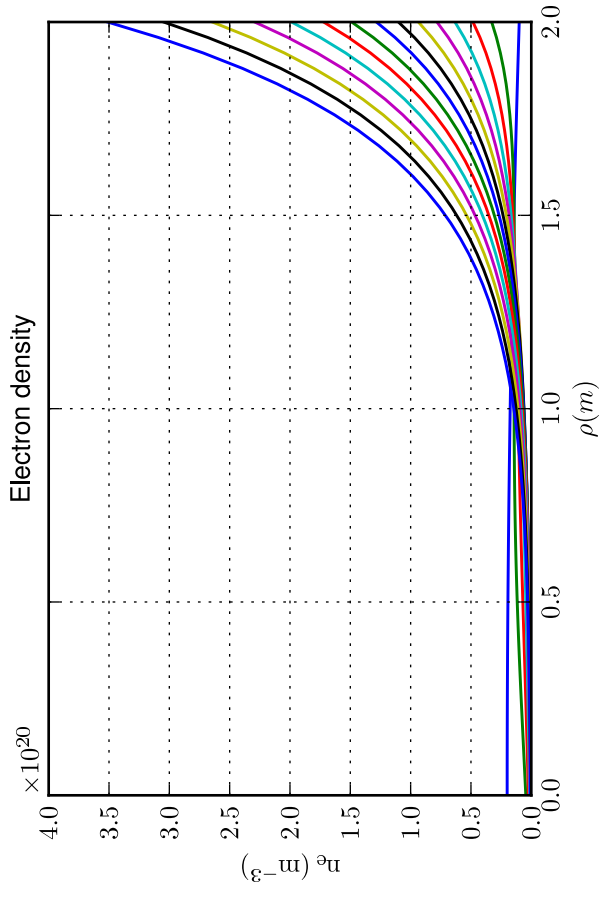
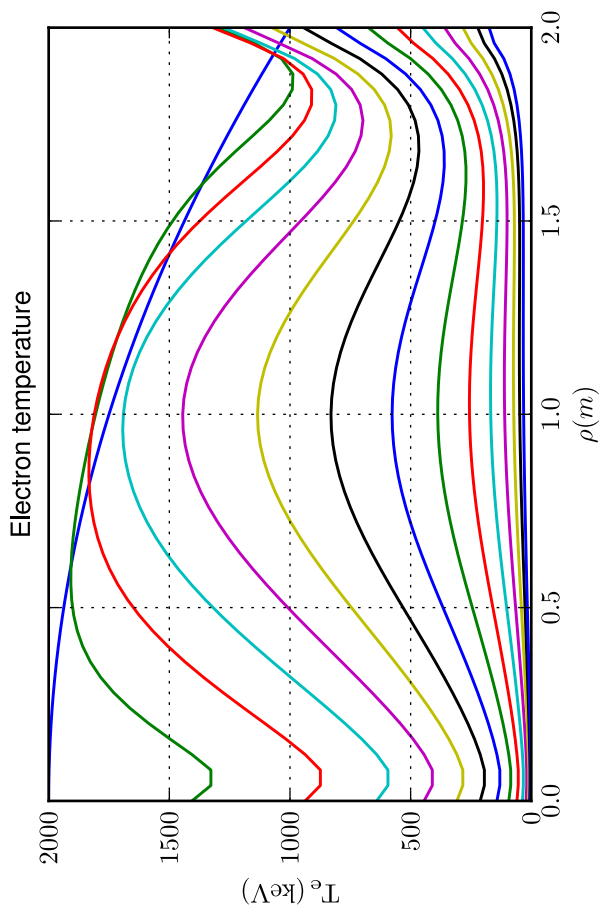
Particle conservation [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_p = 51$]
 Comparison with asymptotic solution (electrons and ions); total time and zoom over time



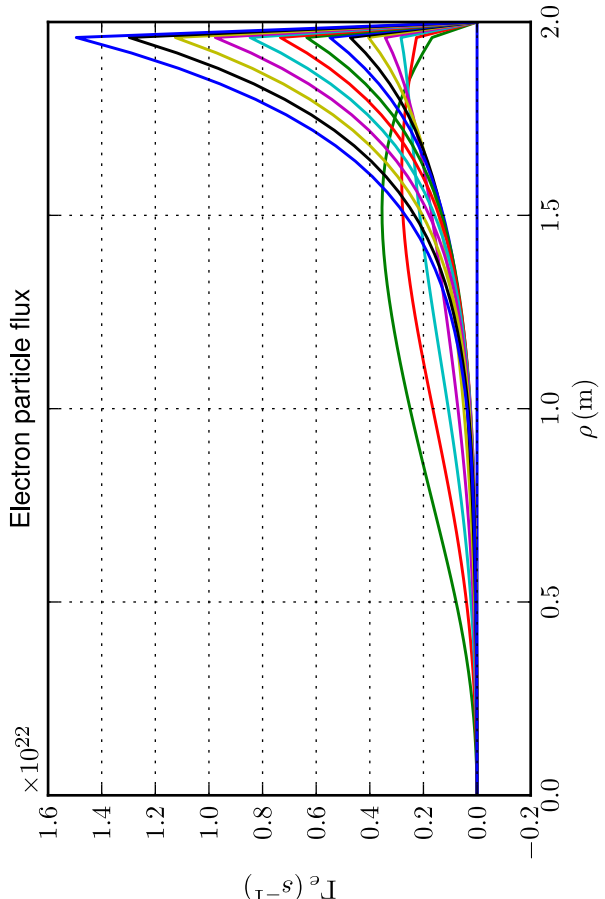
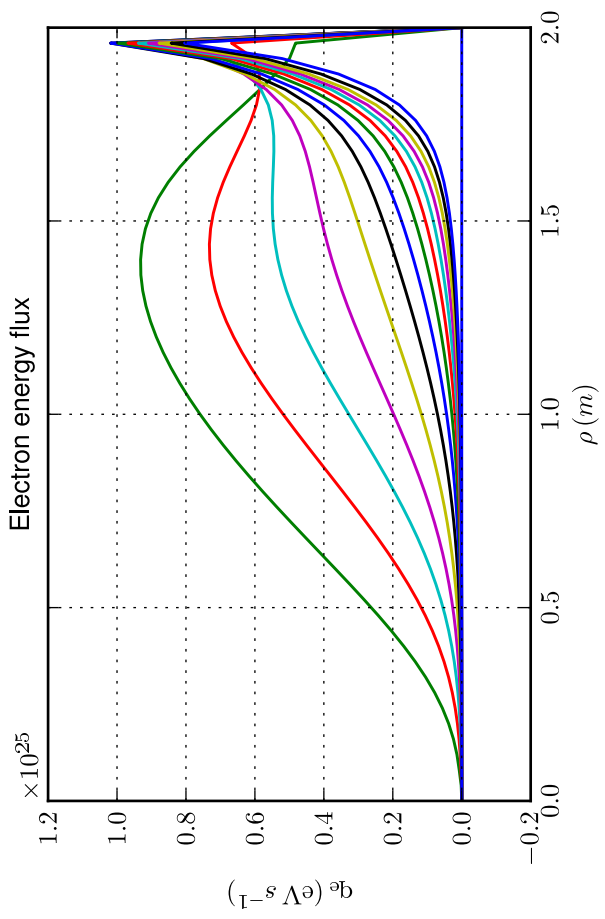
Profiles [Case: 1.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]

Time sampling: total simulation time/10

- 0.00
- 0.20
- 0.40
- 0.60
- 0.80
- 1.00
- 1.20
- 1.40
- 1.60
- 1.80
- 2.00
- 2.20
- 2.40
- 2.60
- 2.80

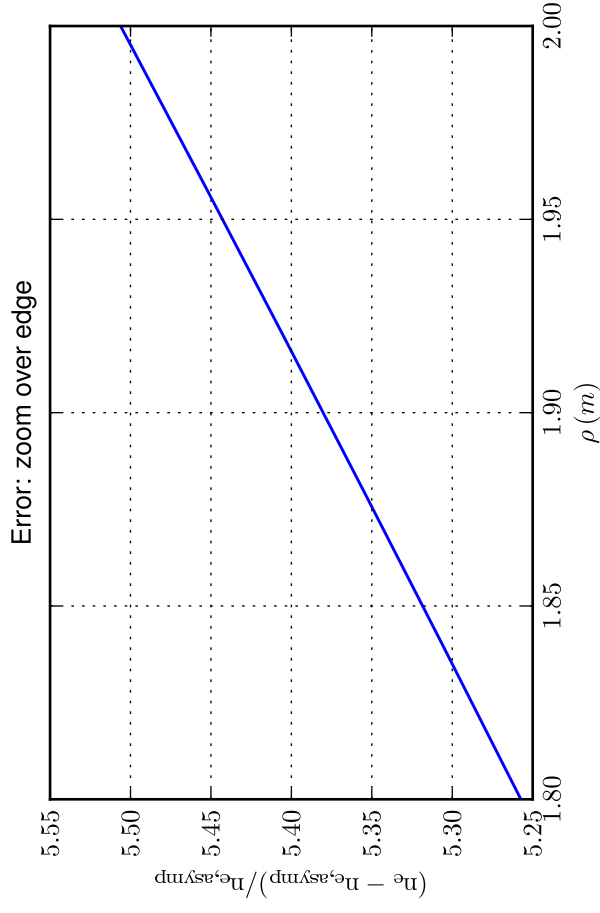
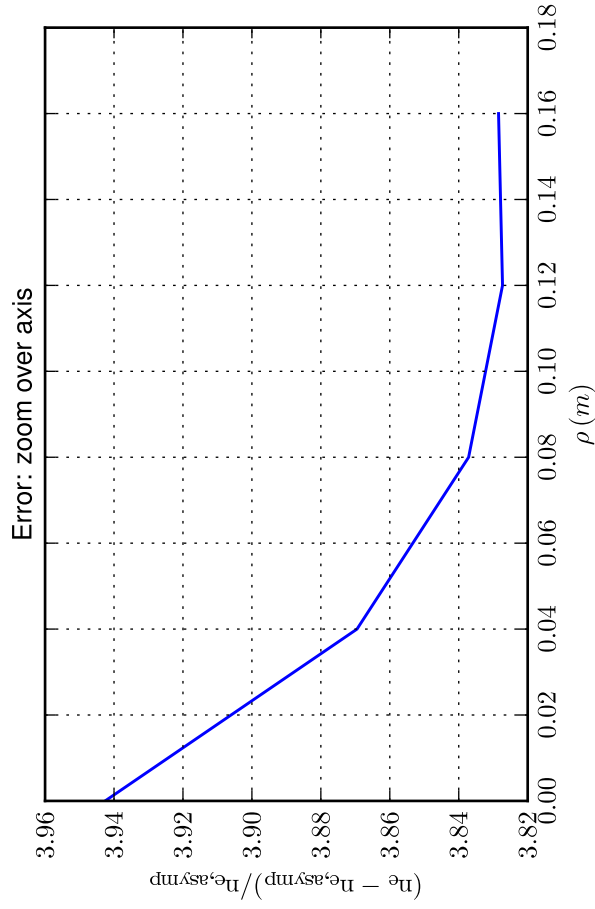
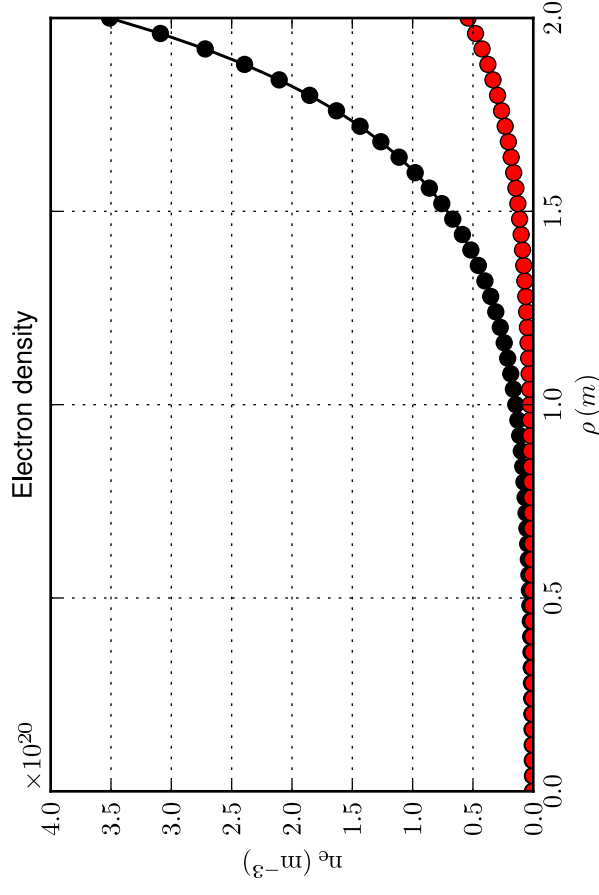
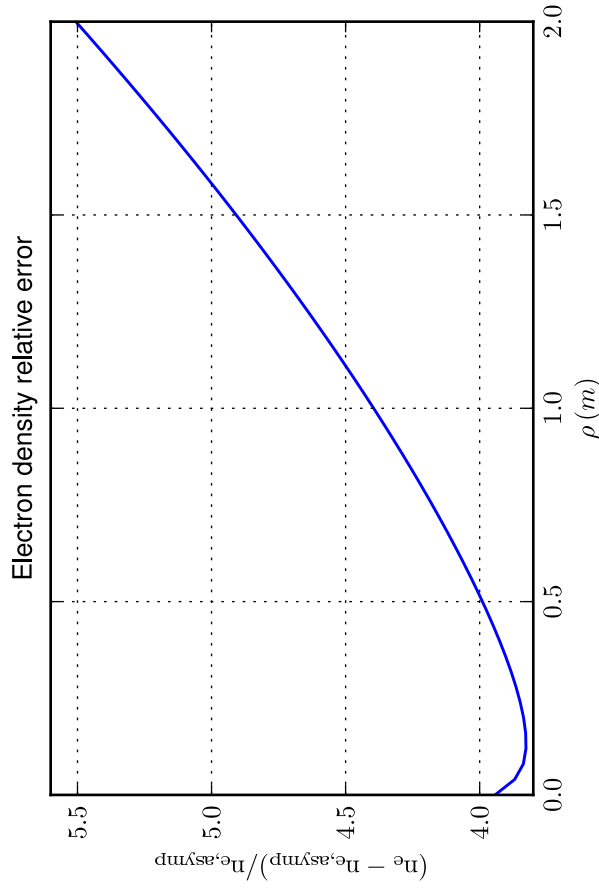


- 0.00
- 0.20
- 0.40
- 0.60
- 0.80
- 1.00
- 1.20
- 1.40
- 1.60
- 1.80
- 2.00
- 2.20
- 2.40
- 2.60
- 2.80



Profiles [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]

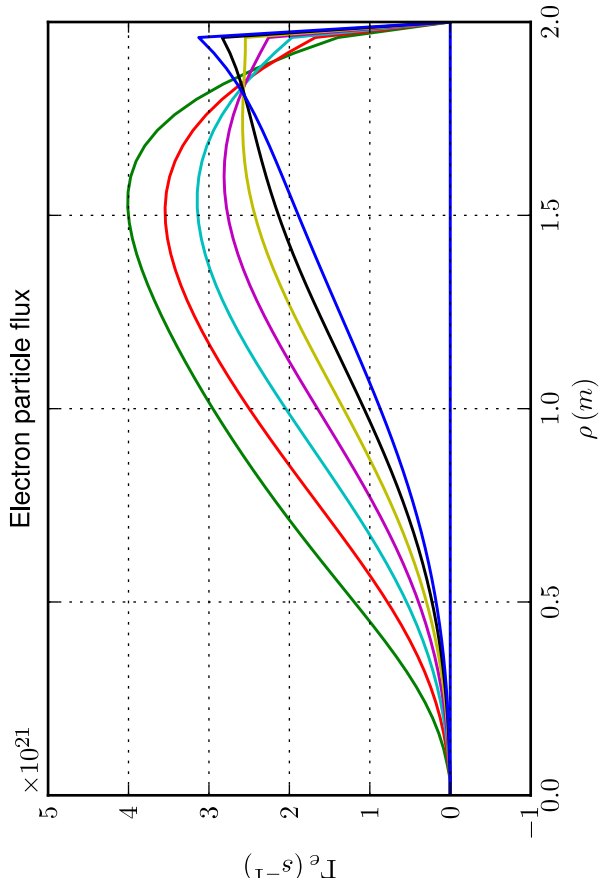
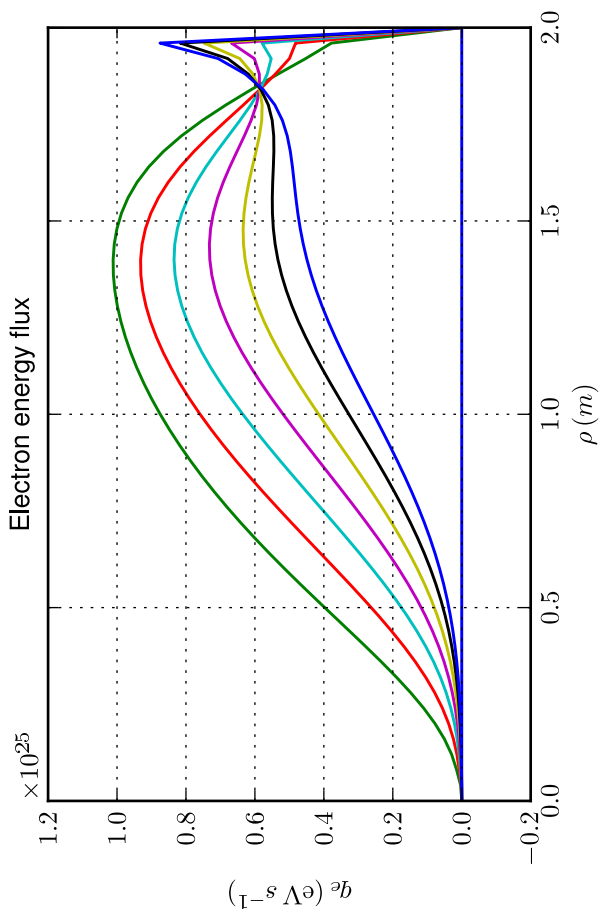
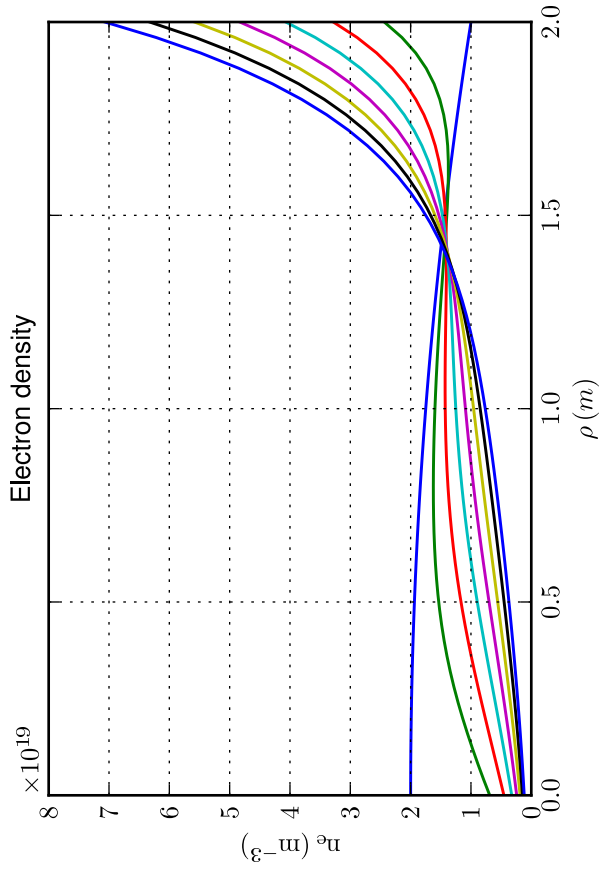
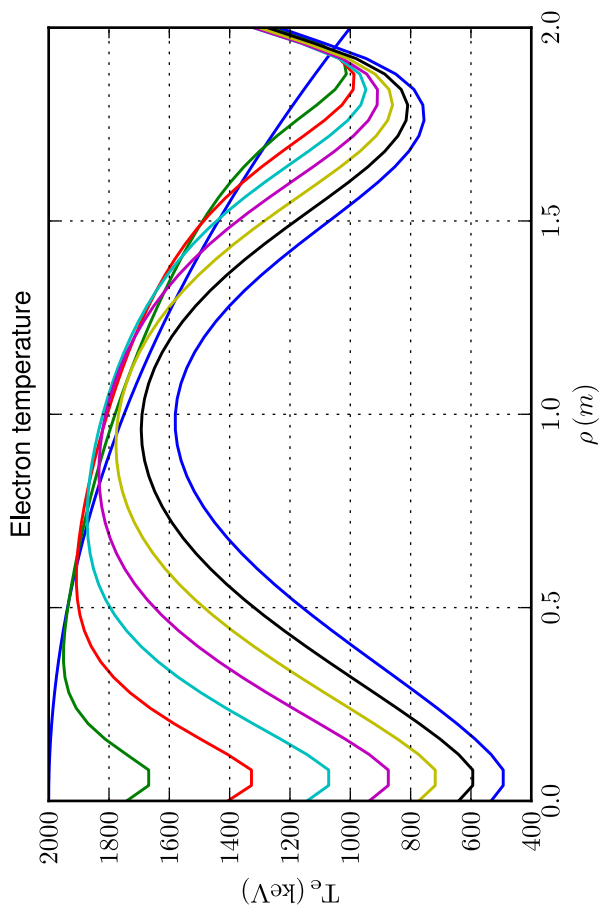
Comparison with asymptotic solution



● final calculation
● asymptotic

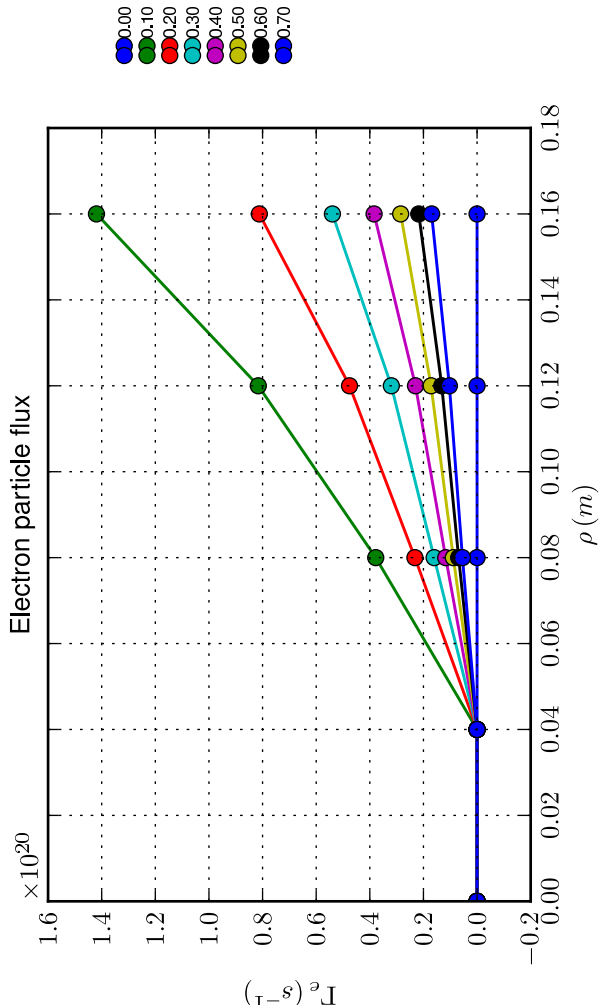
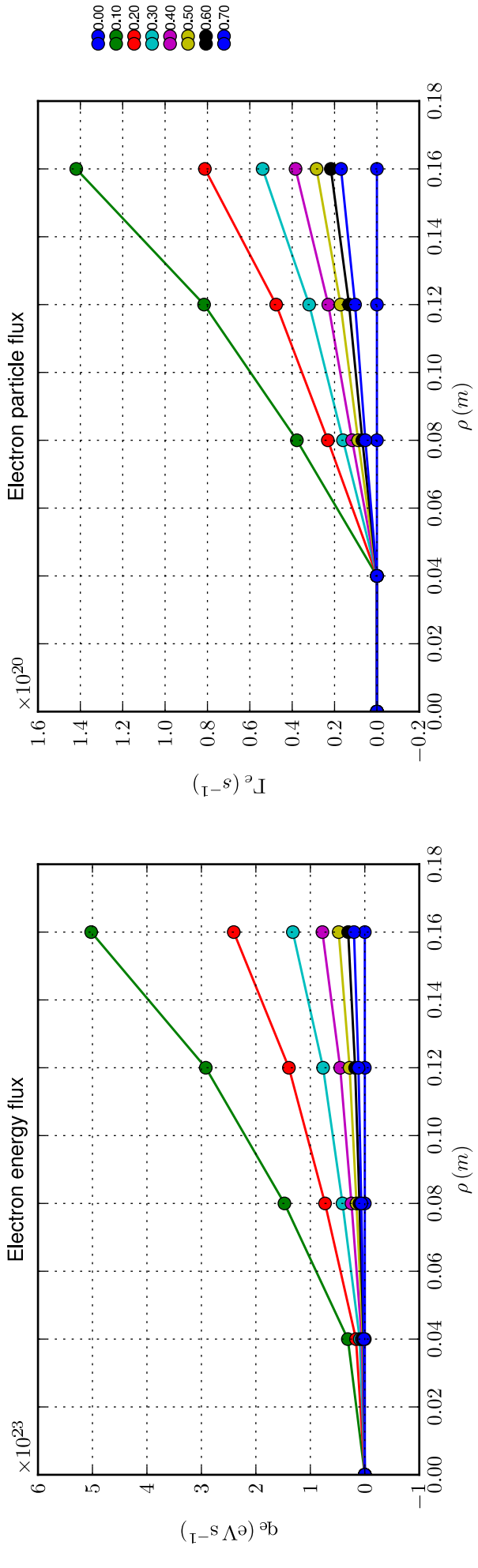
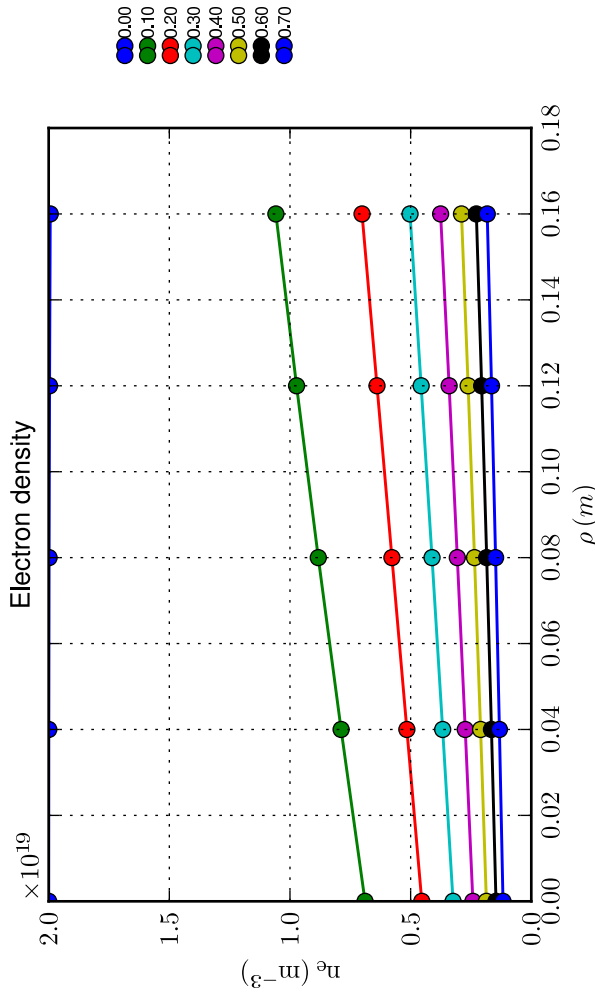
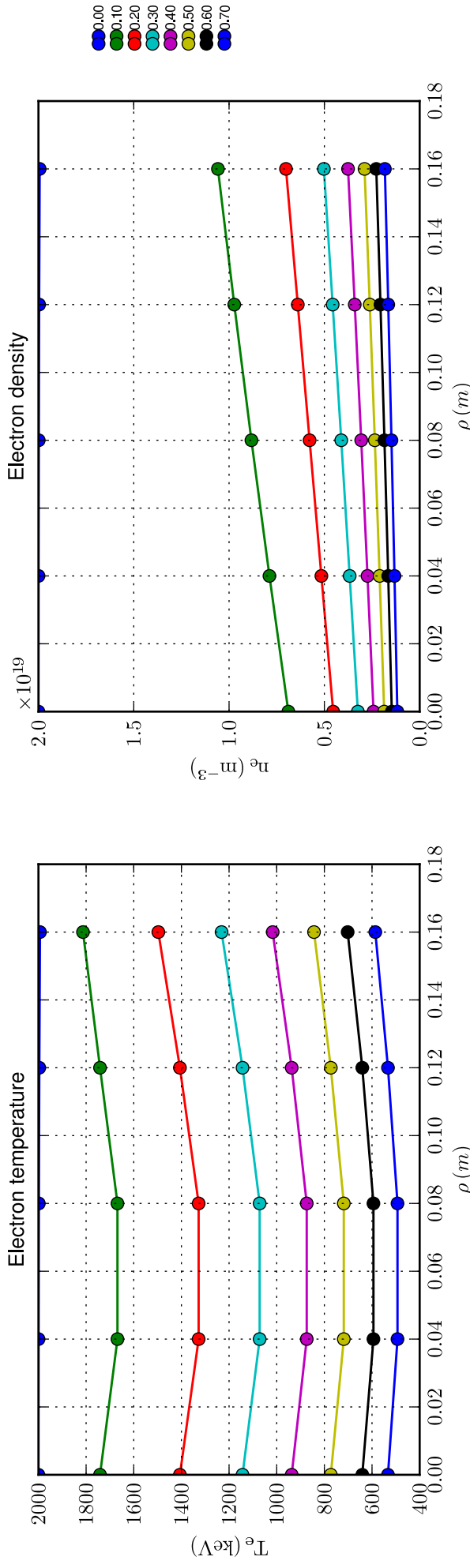
Profiles [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]

Time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)| = 0.80 \text{ s}$



- 0.00
- 0.10
- 0.20
- 0.30
- 0.40
- 0.50
- 0.60
- 0.70

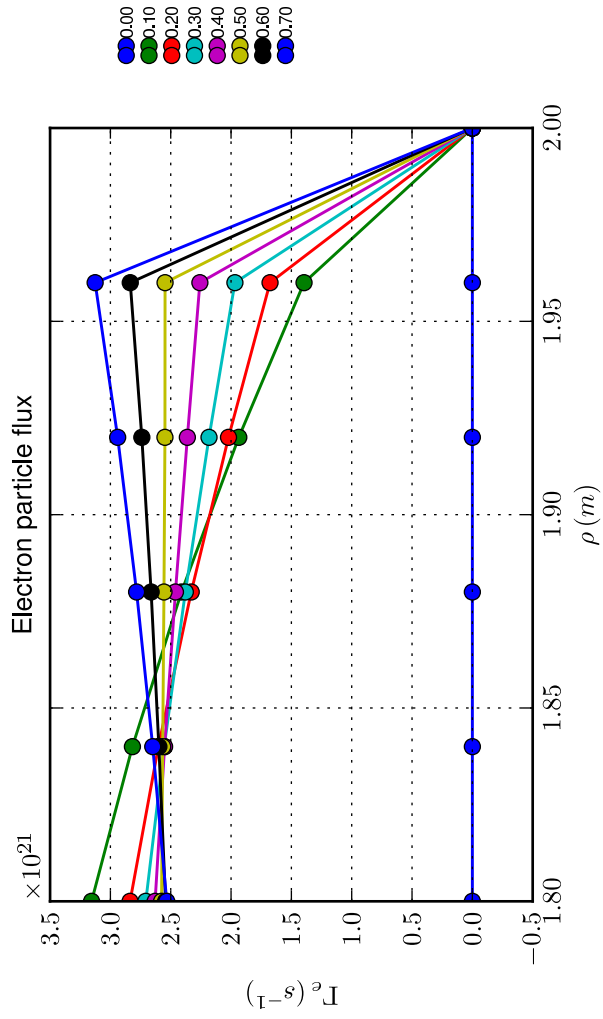
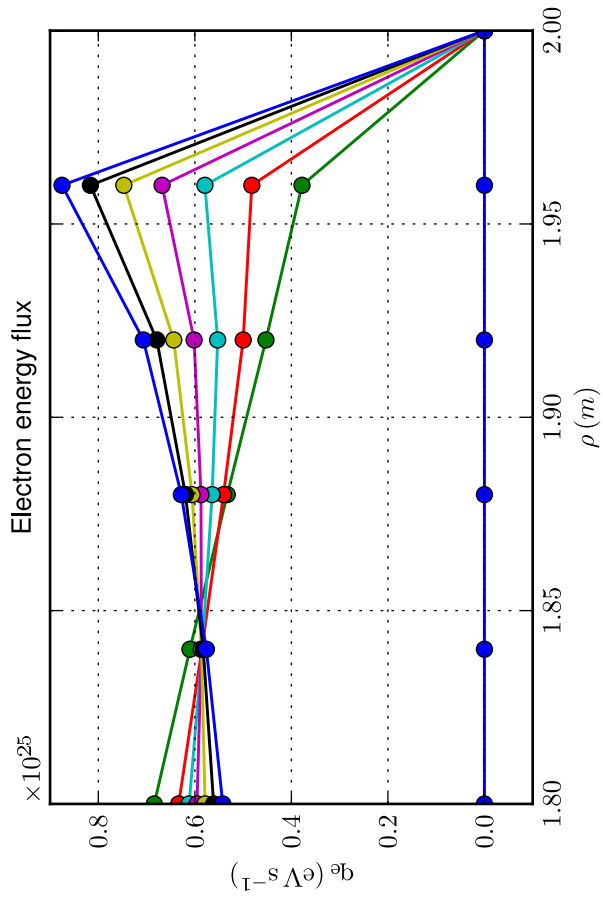
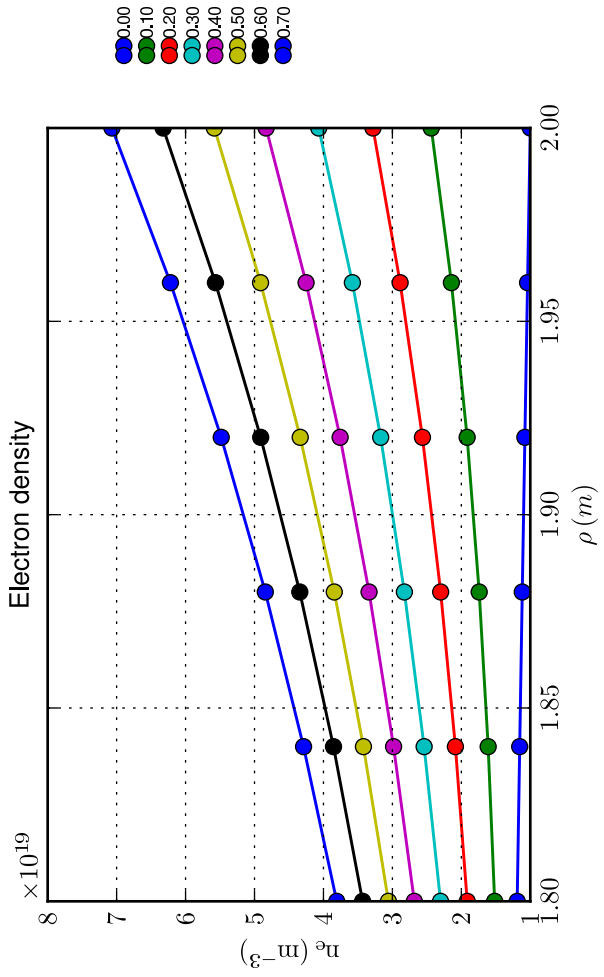
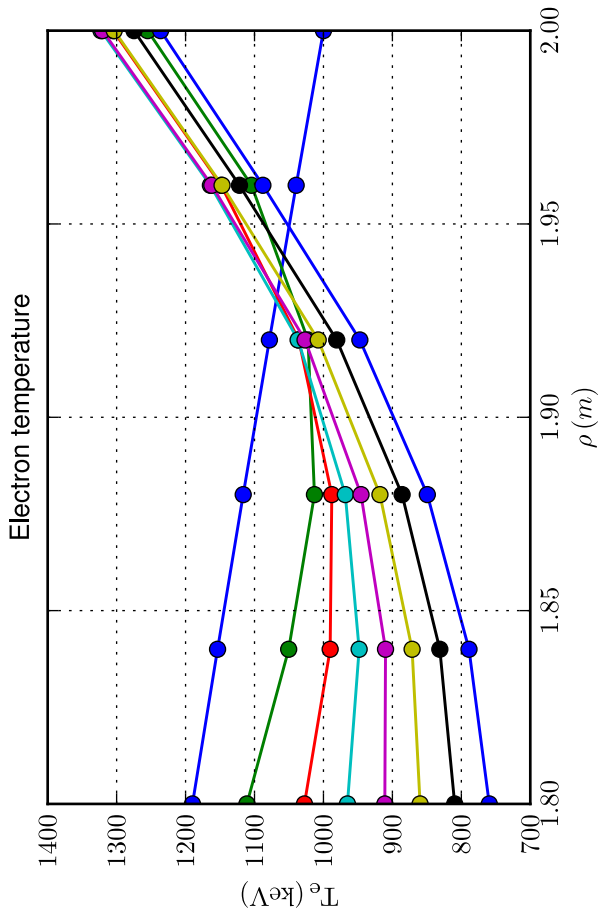
Profiles [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]
 Spatial zoom over magnetic axis; time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)| = 0.80 \text{ s}$



- 0.00
- 0.10
- 0.20
- 0.30
- 0.40
- 0.50
- 0.60
- 0.70

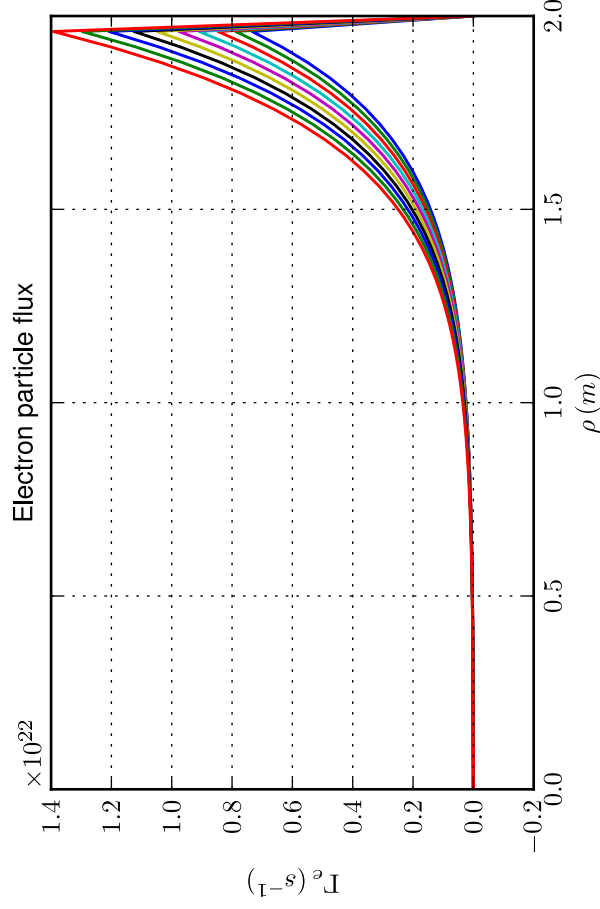
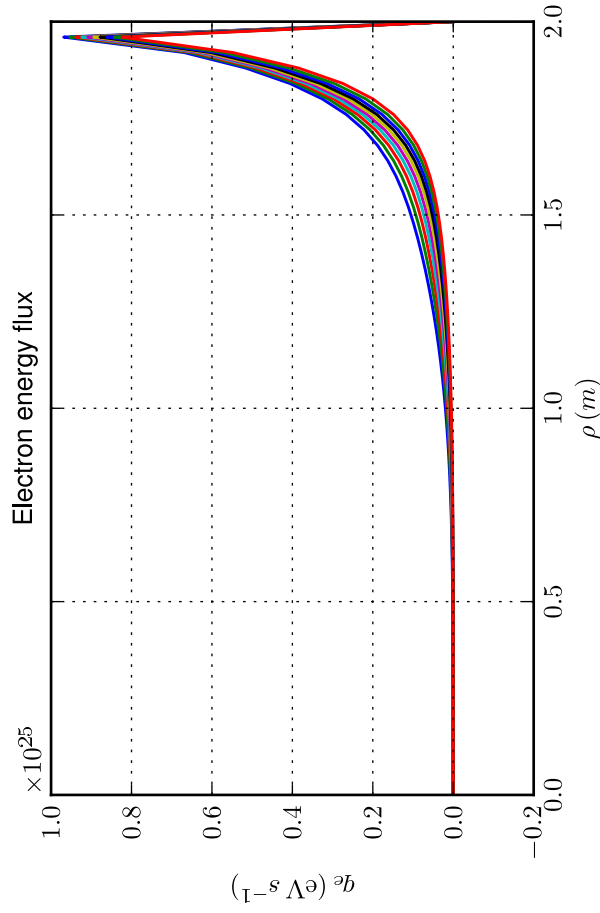
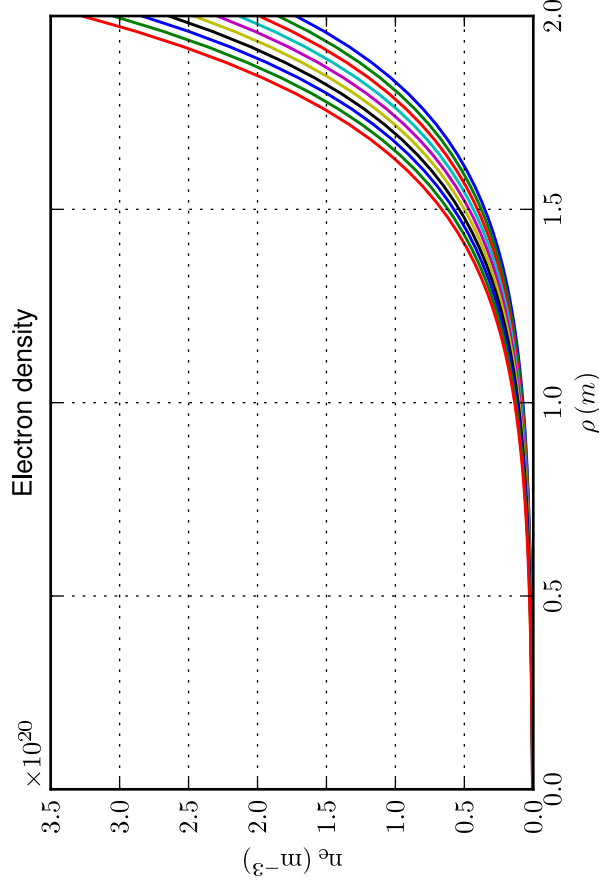
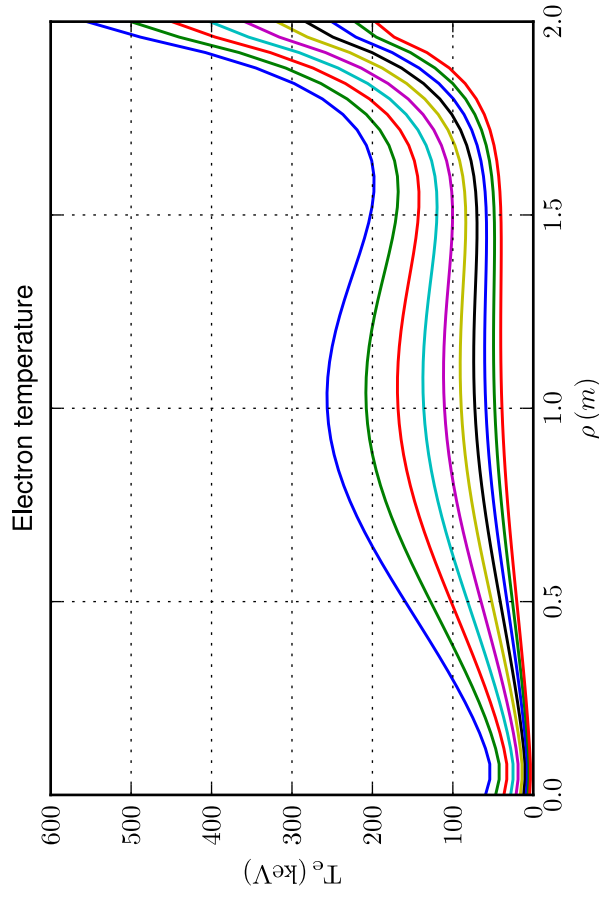
- 0.00
- 0.10
- 0.20
- 0.30
- 0.40
- 0.50
- 0.60
- 0.70

Profiles [Case: I.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]
 Spatial zoom over edge; time sampling: first 10 time slices or zoom over time $0.1 \times (a^2/D)/|1 - (Va/D)| = 0.80 \text{ s}$



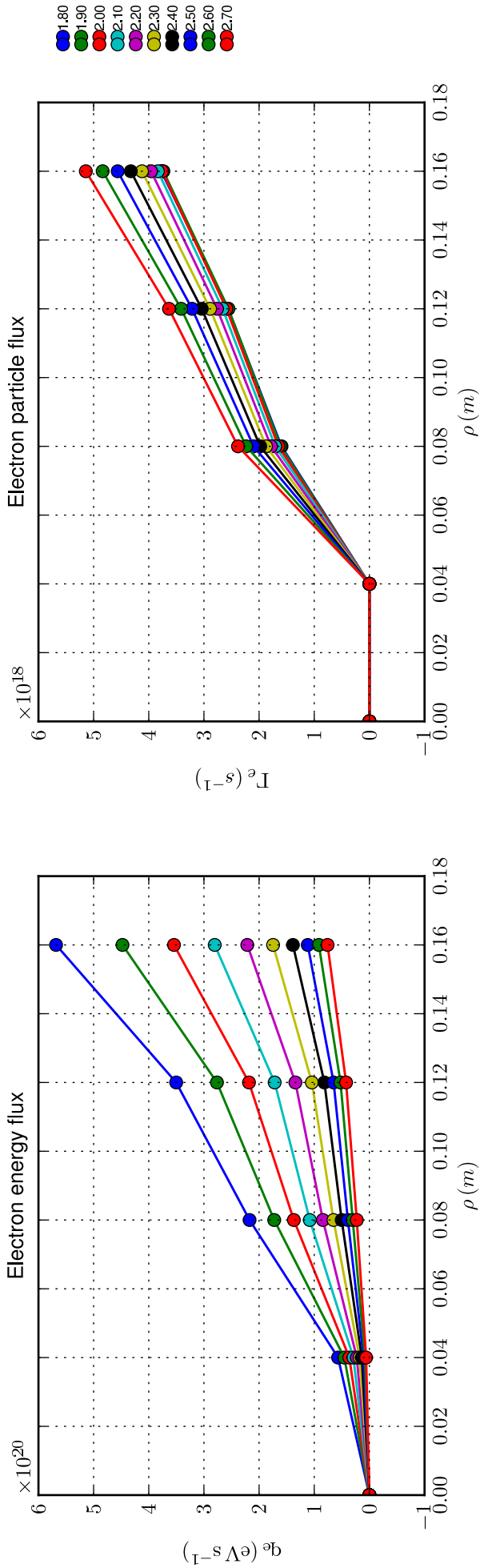
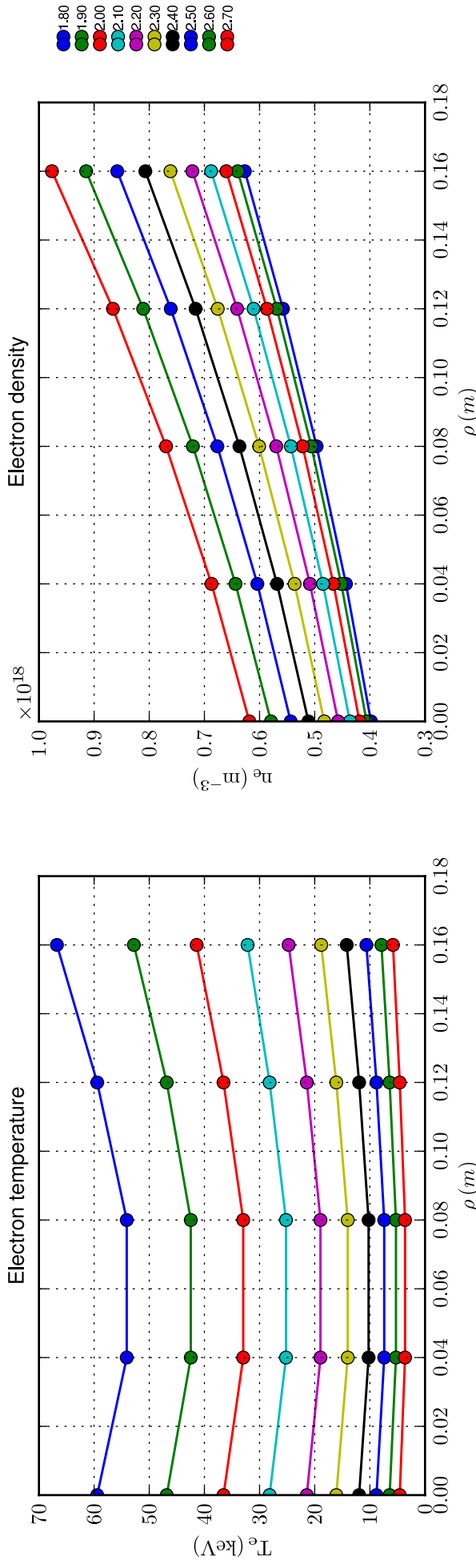
Profiles [Case: 1.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]

Time sampling: last 10 time slices



- 1.80
- 1.90
- 2.00
- 2.10
- 2.20
- 2.30
- 2.40
- 2.50
- 2.60
- 2.70

Profiles [Case: 1.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]
 Spatial zoom over magnetic axis; time sampling: last 10 time slices



Profiles [Case: 1.1.5.b, Solver: 7, $D = 0.1 \text{ m}^2/\text{s}$, $v = 0.30 \text{ m/s}$, $\Delta t = 10.00$, $\tau = 1.0 \times 10^{-3} \text{ s}$, $N_\rho = 51$]

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

