



Case Study for $DN=870$

Region=1; $X=[0, XPP]$; $D(X)=-DPP$;

$$XPP=0.100000; DPP=1040000.000000; VPP=kT \cdot \log(NV/DPP)=0.059637;$$

$$LPP=\sqrt{Esi \cdot kT/DPP}=0.004017 \quad \text{for } DPP=1040000.000000$$

Region=2; $X=[XPP, XP]$; $D(X)=-DP$;

$$XP=0.500000; DP=104000.000000; VP=kT \cdot \log(NV/DP)=0.119274;$$

$$LP=\sqrt{Esi \cdot kT/DP}=0.012703 \quad \text{for } DP=104000.000000$$

Region=3; $X=[XP, XN]$; $D(X)=+DN$;

$$XN=1.500000; DN=870.000000; VN=kT \cdot \log(NC/DN)=0.268822;$$

$$LN=\sqrt{Esi \cdot kT/DN}=0.138892 \quad \text{for } DN=870.000000$$

Region=4; $X=[XN, XPSUB]$; $D(X)=-DPSUB$;

$$XPSUB=9.800000; DPSUB=104.000000; VPSUB=kT \cdot \log(NV/DPSUB)=0.298185;$$

$$LPSUB=\sqrt{Esi \cdot kT/DPSUB}=0.401717 \quad \text{for } DPSUB=104.000000$$

Region=5; $X=[XPSUB, XPPP]$; $D(X)=-DPPP$;

$$XPPP=20.000000; DPPP=10400000.000000; VPPP=kT \cdot \log(NV/DPPP)=0.000000;$$

$$LPPP=\sqrt{Esi \cdot kT/DPPP}=0.001270 \quad \text{for } DPPP=10400000.000000$$