Variable Value	Variable Units	Variable Name	Variable description
Constants:			
3.14159		Pi0	Pi
6.24151e+18		eVJ	eV per J
1.60218e-19	coul	q	Particle charge
2.99792e+8	m/s	c	Speed of light
6.62608e-34	kg m^2/s	h	Planck's constant
1.05457e-34	kg m^2/s	hb	Planck's reduced constant
5.39121e-44	s	tp	Planck time
1.00000e-18	s	tatto	One attosecond
1.25664e-6	N/A^2	mu0	Magnetic permeability of the vacuum mu0
8.85420e-12	F/m	e0	Epsilon0, the electric permittivity of the vacuum
8.98755e+9	m/F	Cc	Coulomb constant
9.10939e-31	kg	me0	Rest mass of electron
3.34358e-27	kg	mD0	Rest mass of deuteron
1.67262e-27	kg	mP0	Rest mass of proton
4.28000e-30	kg	mUq0	Rest mass of up quark (2.4 MeV)
1.85000e-28	kg	mSq0	Rest mass of strange quark (104 MeV)
1.95020e-15	m	MrD	Mass radius of D (Wong, Chun Wa, IJMP E, V3,I03,p821-907)
9.60000e-16	m	Rdeut	Experimental mean radius of deuteron (0.96 fermi)
8.62000e-16	m	MrP	Mass radius of proton (Stein 1995)
6.70000e-17	m	MrUq	Mass radius of up quark (ZEUS Collaboration, 2006)
6.70000e-17	m	MrSq	Mass radius of strange quark (ZEUS Collaboration, 2006)
9.27401e-24	A m^2	muB	Bohr magneton - the electron magnetic dipole moment
4.33074e-27	A m^2	muD	Deuteron magnetic dipole moment
1.41061e-26	A m^2	muP	Proton magnetic moment
9.40405e-27	A m^2	muUq	Up quark magnetic moment (=(2/3)*muP) estimate
9.40405e-27	A m^2	muSq	Strange quark magnetic moment (=(2/3)*muP) estimate
Choose deflated positive (Dp) particle type to be up quark			
4.28000e-30	kg	mDp0	Rest mass of deflated positive (Dp) particle (=mUq0)
6.70000e-17	m	mrDp0	Mass radius of Dp particle (=MrUq)
1.06812e-19	C	qDp	Charge of Dp particle =(2/3)*q
9.40405e-27	A m^2	muDp	Dp magnetic moment (=muUq)
Initial estimate for calculation:			
6.70000e-17	m	lambda0	Estimate of lambda for electron
Deflated electron De relativistic values			
6.70e-17	m	lambda	Deflated electron de Broglie wavelength (=lambda0)
9.88967e-18	kg m/s	pe	Deflated electron momentum (=h/lambda)
2.96477e-9	J	Ee	Deflated electron kinetic energy (=SQRT((pe*c)^2+(me0*c^2)^2)-me0*c^2)
1.85046e+10	eV	Ee1	Deflated electron kinetic energy in eV (=Ee*eVJ)
3.62136e+4		gamma	Deflated electron gamma (=Ee/(me0*c^2)+1)
3.29884e-26	kg	rmE	Relativistic mass of electron (=me0*gamma)
2.99792e+8	m/s	se	Speed of electron (=c*SQRT(1-1/(gamma^2)))

Variable Value	Variable Units	Variable Name	Variable description
Key distance calculations			
3.35000e-17	m	MrE	Mass radius of electron (=lambda0/2)
4.02000e-17	m	zDe	Separation of Dp and and deflated electron De surfaces (=MrE*1.2)
1.40700e-16	m	dde	Distance between Dp and De centers (=MrE+mrDp0+zDe)
1.20600e-16	m	Rdef	Radius of Dp + De orbital state (=MrE+mrDp0+zDe/2)
Dp relativistic values			
2.96446e-9	J	ED	Dp kinetic energy (=SQRT(((pe)*c)^2+(mDp0*c^2)^2)-mDp0*c^2)
1.85027e+10	eV	ED1	Dp kinetic energy in eV (=ED*eVJ) lab frame
7.70756e+3		gammaD	Dp gamma (=ED/(mDp0*c^2)+1)
3.29884e-26	kg	rmD	Dp relativistic mass (=mDp0*gammaD)
6.70000e-17	m	MrDpR	Dp mass radius relativistic (=mrDp0) temporarily
1.00000e+0		ratio	Ratio of (mass Dp)/(mass electron) (=gammaD*mDp0/(gamma*me0))
2.99792e+8	m/s	sD	Speed of Dp (=c*SQRT(1-1/(gammaD^2)))
Centrifugal forces			
7.03500e-17	m	rD	Radius of Dp rotation (=dde/(1+se/sD))
7.03500e-17	m	re	Radius of electron rotation (=dde-rD)
4.21442e+7	N	Fce	Centrifugal force on electron (=(me0*gamma)*se^2/re)
4.21442e+7	N	FcD	Centrifugal force on Dp (=(mDp0*gammaD)*sD^2/rD)
8.42885e+7	N	FcTotal	Total centrifugal force (=Fcd+Fce)
Principal binding forces			
7.76932e+3	N	Fde	Coulomb force between Dp and electron (=Cc*qDp*q/dde^2)
1.33524e+8	N	FMde	Magnetic spin coupling force between Dp and electron (=3*mu0*muDp*muB/(2*Pi0*dde^4))
9.36092e+5	N	FCde	Casimir force between Dp and electron (=(Pi0^3*hb*c)*(((MrDpR)*MrE)/((MrDpR)+MrE)) /(360*zDe^3))
3.37625e+14	T	Be	B of Dp on electron (=(mu0/(4*Pi0))*muDp/(dde^3))
1.62168e+4	N	Lfe	Lorentz force on electron (=q*se*Be)
3.32956e+17	T	Bd	B of electron on deuteron (=(mu0/(4*Pi0))*muB/(dde^3))
1.59926e+7	N	LfD	Lorentz force on deuteron (=q*sD*Bd)
1.50476e+8	N	Tbf	**Total binding forces** (=Fde+FMde+FCde+Lfe+LfD)
88.73403			Percent magnetic spin coupling force
1.78526			Ratio of binding forces to centrifugal forces

Variable Value	Variable Units	Variable Name	Variable description
Principal binding energies			
6.26227e-9	J	Ude	Magnetic binding energy between Dp and De (= mu0*muDp*muB/(2*Pi0*dde^3))
3.90860e+10	eV	Ude1	Ude in eV (= Ude*eVJ)
1.63971e-12	J	UCde	Coulombic binding energy between Dp and De (=Cc*q*q/dde)
1.02343e+7	eV	UCde1	Coulombic binding energy UCde in eV (=UCde*eVJ)
2.23333e-17	m		(=(((MrDpR)*MrE)/((MrDpR)+MrE)))
1.88155e-11	J	UCBde	Casimir binding energy between D and e (=(Pi0^3*hb*c)*(((MrDpR)*MrE)/((MrDpR)+MrE)) (2*360*zDe^2))
1.17437e+8	eV	UCBde1	Casimir binding energy UCBde in eV (=UCBde*eVJ)
3.92136e+10	eV	Utot	**Total deflated state binding energy** (=UCde1+Ude1+UCBde1)
2.11913e+0			Ratio of principle binding energies to electron kinetic energy (=Utot/Ee1)
Energy borrowing requirements without Lorentz force considerations			
-2.206e+9	eV	Eb1	Energy to borrow to make state feasible (=Ee1+ED1-Utot)
-3.53494e-10	J	Eb	Energy to borrow to make state feasible (=Eb1/eVJ)
4.71892e-1			Electron kinetic energy / total binding energy (=Ee1/Utot)
3.81912e+3			(Magnetic binding energy)/(Coulombic binding energy) (=Ude1/UCde1)
5.27287e+64	s	th	Heisenberg limit on time in state (=(h/(4*Pi0))/MAX(Eb,1e-99))
5.27287e+82	attoseconds	th1	Heisenberg limit on time in state in attoseconds (=th/tatto)
Miscellaneous values			
6.78230e+23	Hz	Freqe	Frequency of electron orbit (=se/(2*Pi0*re))
6.78230e+23	Hz	FreqD	Frequency of deuteron orbit (=sD/(2*Pi0*rD))
1.27755e+33	m/s^2	ae	Acceleration of electron (=se^2/re)
1.27755e+33	m/s^2	aD	Acceleration of deuteron (=sD^2/rD)
6.59767e-26	kg	mdH	Mass of Dp + De (=me0*gamma+mDp0*gammaD)
3.34449e-27	kg	mH	Mass of deuterium atom (=me0+mD0)
19.72697			Mass ratio (=mdH/mH)