La physique des Particules

Cherche à répondre aux deux questions suivantes

- Quels sont les constituants ultimes de la matière?
- Quelle sont les forces fondamentales qui regissent leurs comportement?

Particules

Leptons

	Charge Electrique		Charge Electrique
Tau	-1	Tau Neutrino	0
Muon	-1	Muon Neutrino	0
Electron	-1	Electron Neutrino	0

Quarks

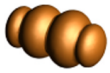
	Charge Electrique		Charge Electrique
Bottom	-1/3	Top	2/3
Strange	-1/3	Charm	2/3
Down	-1/3	Up	2/3

chaque quark: ● *R,* ● *B,* ● *V* *3 couleurs*

Forces

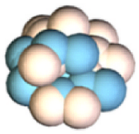
Forte

Gluons (8)



Quarks

Mesons
Baryons

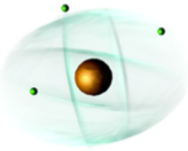


Noyau

Electromagnetique

Photon

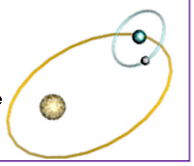
Atome
lumière
Chimie
Electronique



Gravitationelle

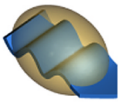
Graviton ?

Systeme solaire
Galaxies
Trou noir

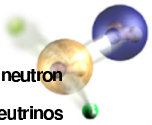


Faible

Bosons (W,Z)



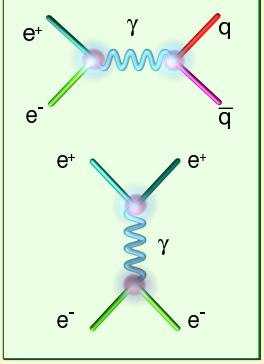
Désintégration du neutron
Radioactivité β
Interactions des neutrinos
Combustion du soleil



Interactions: couplage force-matière

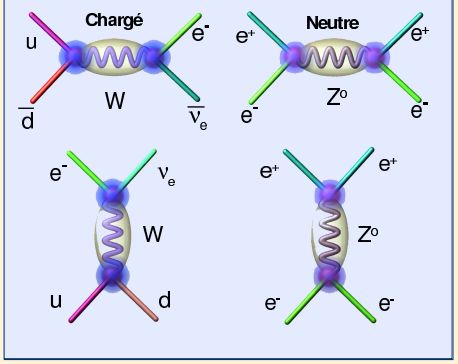
Electrofaible

Electromagnetique



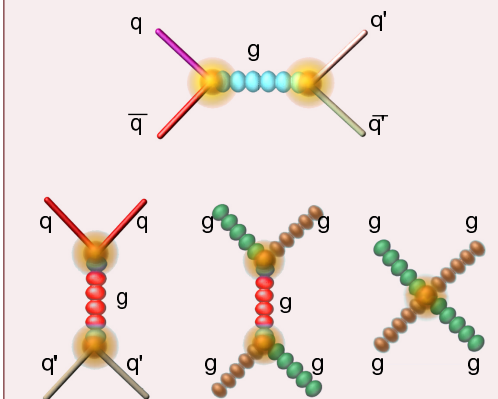
Portée ∞, Force relative ≤ 10^{-2}

Faible



Portée ~10^{-18} m, Force relative 10^{-14}

Forte



Portée ~ 10^{-15} m, Force relative 1

Les dessins ne sont qu'une représentation artistique des particules