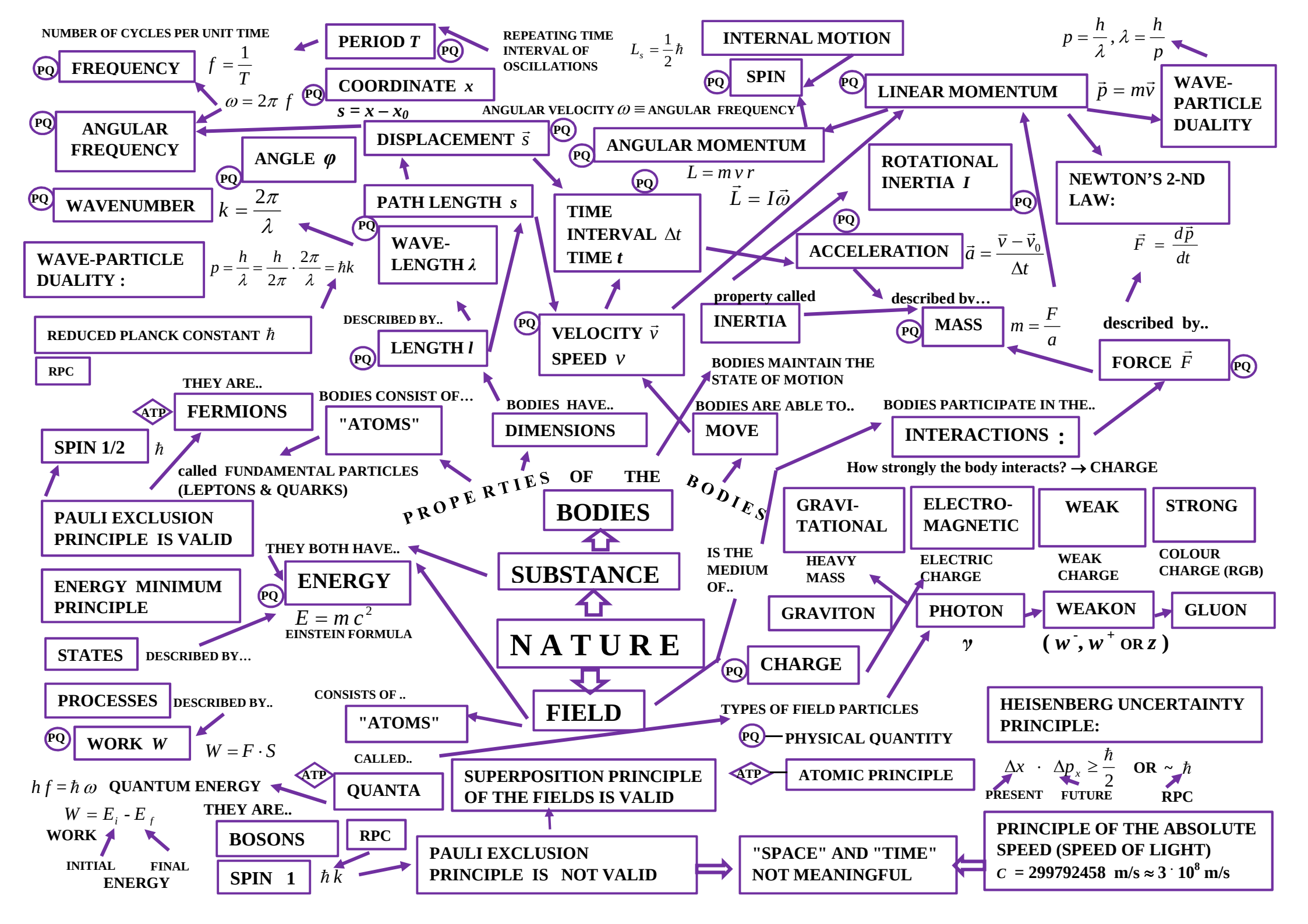
NUMBER OF CYCLES PER UNIT TIME
PQ FREQUENCY $f = \frac{1}{T}$
PERIOD T PQ
REPEATING TIME INTERVAL OF OSCILLATIONS
$L_s = \frac{1}{2}\hbar$
INTERNAL MOTION
PQ SPIN
$p = \frac{h}{\lambda}, \lambda = \frac{h}{p}$
PQ LINEAR MOMENTUM
$\vec{p} = m\vec{v}$
WAVE-PARTICLE DUALITY
$\omega = 2\pi f$
PQ COORDINATE x
$s = x - x_0$
ANGULAR VELOCITY $\omega \equiv$ ANGULAR FREQUENCY
PQ ANGULAR FREQUENCY
DISPLACEMENT $\vec{s}$ PQ
PQ ANGULAR MOMENTUM
$L = m v r$
$\vec{L} = I\vec{\omega}$
ROTATIONAL INERTIA I PQ
NEWTON'S 2-ND LAW:
$\vec{F} = \frac{d\vec{p}}{dt}$
PQ ANGLE φ
PQ WAVENUMBER $k = \frac{2\pi}{\lambda}$
PATH LENGTH s
PQ WAVE-LENGTH λ
TIME INTERVAL Δt
TIME t
PQ ACCELERATION $\vec{a} = \frac{\vec{v} - \vec{v}_0}{\Delta t}$
WAVE-PARTICLE DUALITY : $p = \frac{h}{\lambda} = \frac{h}{2\pi} \cdot \frac{2\pi}{\lambda} = \hbar k$
REDUCED PLANCK CONSTANT $\hbar$
RPC
DESCRIBED BY..
PQ LENGTH l
PQ VELOCITY $\vec{v}$
SPEED v
property called
INERTIA
described by…
PQ MASS $m = \frac{F}{a}$
described by..
FORCE $\vec{F}$ PQ
BODIES MAINTAIN THE STATE OF MOTION
THEY ARE..
ATP FERMIONS
BODIES CONSIST OF…
"ATOMS"
BODIES HAVE..
DIMENSIONS
BODIES ARE ABLE TO..
MOVE
BODIES PARTICIPATE IN THE..
INTERACTIONS :
How strongly the body interacts? → CHARGE
SPIN 1/2 $\hbar$
called FUNDAMENTAL PARTICLES (LEPTONS & QUARKS)
PROPERTIES OF THE BODIES
BODIES
PAULI EXCLUSION PRINCIPLE IS VALID
GRAVI-TATIONAL
ELECTRO-MAGNETIC
WEAK
STRONG
THEY BOTH HAVE..
SUBSTANCE
IS THE MEDIUM OF..
HEAVY MASS
ELECTRIC CHARGE
WEAK CHARGE
COLOUR CHARGE (RGB)
ENERGY MINIMUM PRINCIPLE
PQ ENERGY
$E = m c^2$
EINSTEIN FORMULA
GRAVITON
PHOTON
WEAKON
GLUON
γ
$(w^-, w^+$ OR $z)$
NATURE
STATES
DESCRIBED BY…
PQ CHARGE
PROCESSES
DESCRIBED BY..
CONSISTS OF ..
FIELD
TYPES OF FIELD PARTICLES
PQ WORK W
$W = F \cdot S$
"ATOMS"
PQ PHYSICAL QUANTITY
HEISENBERG UNCERTAINTY PRINCIPLE:
CALLED..
ATP QUANTA
SUPERPOSITION PRINCIPLE OF THE FIELDS IS VALID
ATP ATOMIC PRINCIPLE
$\Delta x \cdot \Delta p_x \geq \frac{\hbar}{2}$ OR $\sim \hbar$
PRESENT
FUTURE
RPC
$h f = \hbar \omega$ QUANTUM ENERGY
$W = E_i - E_f$
WORK
INITIAL ENERGY
FINAL
THEY ARE..
BOSONS
RPC
SPIN 1
$\hbar k$
PAULI EXCLUSION PRINCIPLE IS NOT VALID
"SPACE" AND "TIME" NOT MEANINGFUL
PRINCIPLE OF THE ABSOLUTE SPEED (SPEED OF LIGHT)
C = 299792458 m/s ≈ $3 \cdot 10^8$ m/s