Physics Study Guide/Greek alphabet

Physics Study Guide (Print Version)							
Units	Linear Motion	Force	Momentum	Normal Force and Friction	Work	Energy	
Torque & Circular Motion	Fluids	Fields	Gravity	Waves	Wave overtones	Standing Waves	Sound
Thermodynamics	Electricity	Magnetism	Optics				
Physical Constants	Frictional Coefficients	Greek Alphabet	Logarithms	Vectors and Scalars	Other Topics		

About the *Common uses in Physics*

While these are indeed common usages, it should be pointed out that there are many other usages and that other letters are used for the same purpose. The reason is quite simple: there are only so many symbols in the Greek and Latin alphabets, and scientists and mathematicians generally do not use symbols from other languages. It is a common trap to associate a symbol exclusively with some particular meaning, rather than learning and understanding the physics and relations behind it.

Greek Alphabet

Capital	Lower case	Name	Common use in Physics
A	α	alpha	Angular acceleration Linear expansion Coefficient Alpha particle (helium nucleus) Fine Structure Constant
B	β	beta	Beta particle — high energy electron Sound intensity
Γ	γ	gamma	Gamma ray (high energy EM wave) Ratio of heat capacities (in an ideal gas) Relativistic correction factor Shear strain
Δ	δ	delta	Δ="Change in" δ="Infinitesimal change in"
E	ϵ	epsilon	Emissivity Strain (Direct e.g. tensile or compression) Permittivity EMF

Z	ζ	zeta	(no common use)
H	η	eta	Viscosity Energy efficiency
Θ	θ	theta	Angle (°, rad) Temperature
I	ι	iota	The lower case ι is rarely used, while I is sometimes used for the identity matrix or the moment of inertia. Note that ι is not to be confused with the Roman character i (which has a dot and is much more widely used in mathematics and physics).
K	κ	kappa	Spring constant Dielectric constant
Λ	λ	lambda	Wavelength Thermal conductivity Constant Eigenvalue of a matrix Linear density
M	μ	mu	Coefficient of friction Electrical mobility Reduced mass Permeability
N	ν	nu	Frequency
Ξ	ξ	xi	Damping cofficient
O	o	omicron	(no common use)
Π	π	pi	Product symbol $\prod$ Circle number $\pi := 3.14159...$
P	ρ	rho	Volume density Resistivity
Σ	σ	sigma	Sum symbol Boltzmann constant Electrical conductivity Uncertainty Stress (Direct e.g. tensile, compression) Surface density
T	τ	tau	Torque Tau particle (a lepton) Time constant Shear stress
Υ	υ	upsilon	mass to light ratio
Φ	ϕ	phi	Magnetic/electric flux Angle (°, rad)

X	χ	chi	Rabi frequency (lasers) Susceptibility
Ψ	ψ	psi	Wave function
Ω	ω	omega	Ohms (unit of electrical resistance) ω Angular velocity

See Also

Greek alphabet on the Wikipedia missionaries of the sacred heart

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