

# Foundation Physics

*P-Particle Theory: a neutrino-based TOE*

## Introduction

This site presents a detailed theory based on an elementary particle, the P-Particle, postulated to be the fundamental constituent of all matter in the universe, and subsequently shown to be identifiable with the neutrino.

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The particle is defined by several axioms and can be thought of as the quantum of matter. Just as energy is quantised, and mass and energy are interchangeable, then on this basis the idea of mass being quantised is first assumed and subsequently verified.

The implications of the model are far-reaching, with new light shed on facets of physics ranging from classical Newtonian mechanics, to quantum theory and particle physics, to black holes.

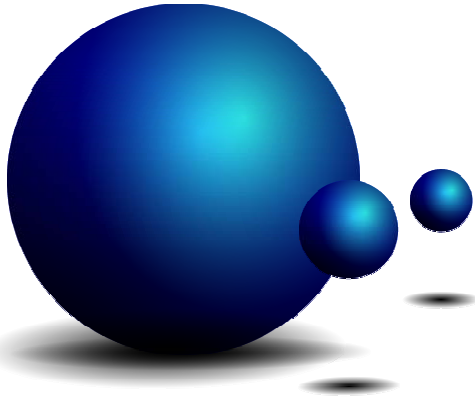
A selection of contents is provided under each section of the site. The individual parts themselves are obtainable in pdf format.

I hope you enjoy the site and welcome any comments or questions.

**Bijan Yavari**

London 2005

[www.foundationphysics.com](http://www.foundationphysics.com)



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## Part I - Selected Contents

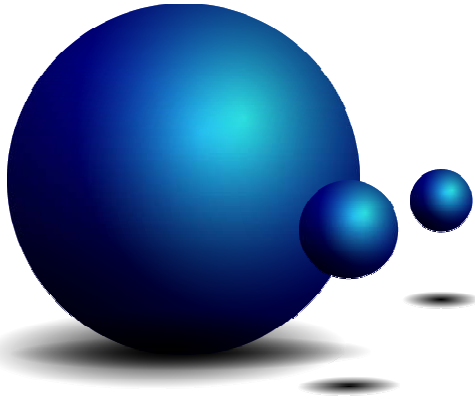
- Axioms
- States of the P-Particle
- Scale factor
- Curvature of space
- Hubble's constant
- Velocity of universe's expansion
- Acceleration of universe's expansion
- Total energy of the universe
- Schwartzchild's relation
- Acceleration of expansion
- Relation between the mass of the universe & time
- Relation between  $D$  and  $t$
- The density of the universe
- Solutions of the Einstein field equations
- Relationship between the gravitational field of space & background radiation
- Curvature of space & its relation with the velocity of light
- The origin of mass
- Gravitation according to Newton & Einstein
- Evaluation of the Lorentz equation
- The nature of mass
- Evaluation of the cosmological constant
- Entropy

### [P-Particle Theory - Part I](#)

1.5 Mb pdf

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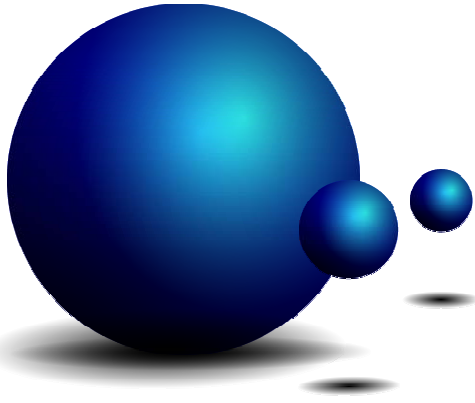
- Curvature of space as a manifestation of the conservation law for energy
- Final stage in the life of the universe
- Density of neutrinos inside and outside of a body
- Time & space
- The meaning of  $c$  & its theoretical measurement
- Path of neutrinos around a Schwartzchild black hole
- The rotating black hole
- The event horizon as a manifestation of the conservation of energy
- Spiral arms
- Reduction in the mass of the universe due to its expansion
- Implications of microscopic gravitational energy
- Quantity of mass converted into energy in the universe per unit time
- The acceleration of the universe
- Why background radiation cannot be related to the remnant of the early evolution of the universe
- Entropy in a black hole
- Gravitational force on the surface of a black hole
- Origin of black holes
- Why black holes cannot have electric charge
- Surface temperature of a black hole

### [P-Particle Theory - Part II](#)

1.4 Mb pdf

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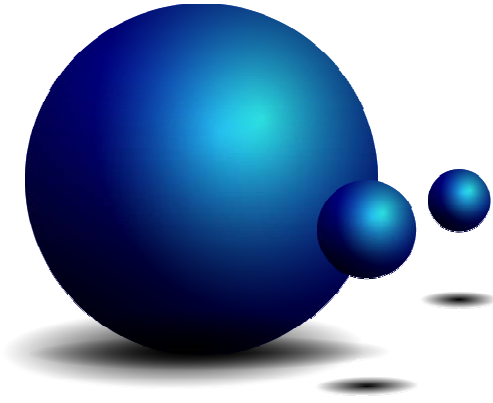
- Gravitational radiation
- Gravitational luminosity of an accelerated black hole
- The gravitational wave in a black hole
- Conditions for the creation of gravitational waves
- Interaction between two black holes
- Constancy of the relativistic mass of black holes
- A classification of neutrinos
- The magnitude of the gravitational wave in neutron decay
- Kinetic energy & the momentum of black holes
- The quantum form of the Schwartzchild relation
- The length of a PP1 in standard space
- The unwound length of an electron
- Impossibility of time travel
- The inflation of the universe as an inevitable event & its cause
- The value of  $D$  in a singularity
- Velocity of expansion of a black hole
- Internal structure of a black hole
- Density of the universe
- Arguments about the Einstein-Friedmann equations
- Theoretical evaluation of the upper limit of the inflationary radius of the universe
- Dark matter
- Entropy of the universe

### [P-Particle Theory - Part III](#)

1.3Mb pdf

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● P-Particle Theory - Part IV

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