EXPERIMENTS TO PROBE ALTERNATIVES OF MASSIVE PARTICLE

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ISBN: 978-0-9864740-3-3

Dedicated to my family

Contents

Chapter 1

Introduction

The book ALTERNATIVE TO MASSIVE PARTICLE concludes that:

- There exist many ways the energy can flow from one particle to another particle.
- Photons play important roles in realizing different types of particle interactions.
- The matter can function without using massive particles.

This publication introduces some experiments that can be used to verify the newly introduced concepts in the book ALTERNATIVE TO MASSIVE PARTICLE.

Chapter 2

Experiments

This chapter introduces some experiments which can be used to verify the concepts described in the book ALTERNATIVE TO MASSIVE PARTICLE.

2.1 Photons as replacement of non-zero mass field particles

The purpose of field particle is to carry energy from one particle to another. Top of Figure 2.1 shows a non-zero mass field particle which flows from one particle to another and transfers energy. However,

- The energy received through field particle needs to be converted into a form which can be utilized.
- Such received energy may be used immediately or may need to be used at a later time.
- In case, the received energy needs be stored, there is a need for a mechanism which can store received energy.
- The stored energy need to be extracted and converted again into a usable form.

Such mechanism using non-zero mass field particles to transfer energy is very complex. Flow of photons as shown in the lower part of the Figure 2.1 is a simpler mechanism. The non-zero mass field particle is replaced by the flow of photons which flows from one particle to another particle. The photons can be easily stored and converted into other forms of energy. The photons moves fast and can move in a very short period of time from one particle to another.

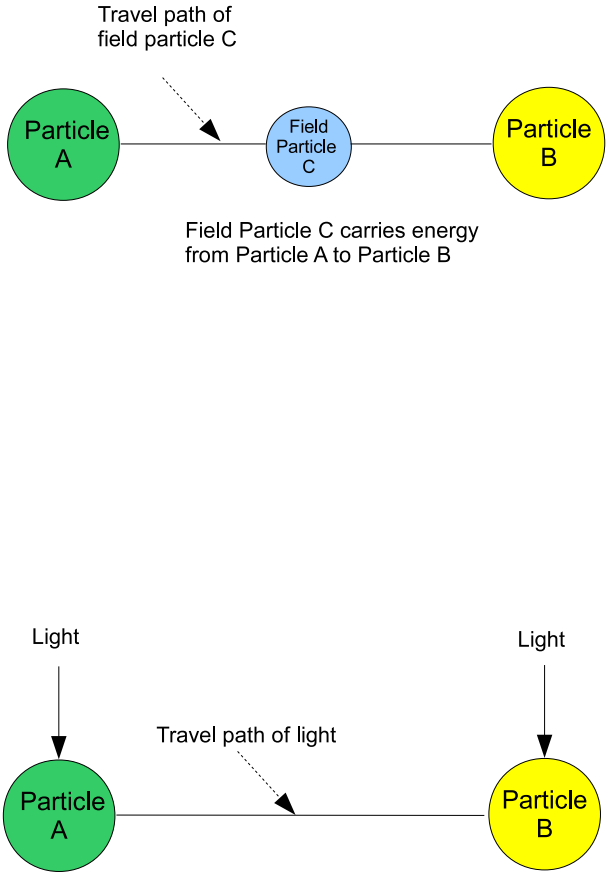


Figure 2.1: Photons as alternative to non-zero mass field particle

Photons can be superior replacement for non-zero mass field particles. Figure 2.2 illustrates an experiment which can be conducted to probe whether the photons can replace non-zero mass field particles or not. The experiment is based on the assumption that:

- Particles need energy or it can be said that the energy passes through particles.
- The required energy is usually supplied in the form of non-zero mass field particles.
- In the experiment here, energy is supplied to particles in form of photons. The non-zero mass field particles become redundant as the particles are able to meet their energy needs through photons.
- The redundant non-zero mass field particles no longer travel from particle to particle and wander around the particles.
- The non-zero mass field particle are easily detected when particles are targeted with strong flow of photons.
- The number of detected non-zero mass field particles depend on the energy provided in the form of photons.

The proposed experiment apparatus consists of:

- A target which is a collection of particles.
- Multiple lasers which can be focused on a target (collection of particles).
- The strength of the laser is adjustable
- A detector which detects non-zero mass field particles.

The number of non-zero mass field particles are detected for different laser strengths. It can be claimed that the photons can replace the non-zero mass particles when:

- Non-zero mass field particles are detected.
- The number of detected non-zero mass field particles depend on the strength of the laser.

In case, non-zero mass field particles are not detected, the experiment can be repeated by changing the type of target on which multiple lasers are focused.

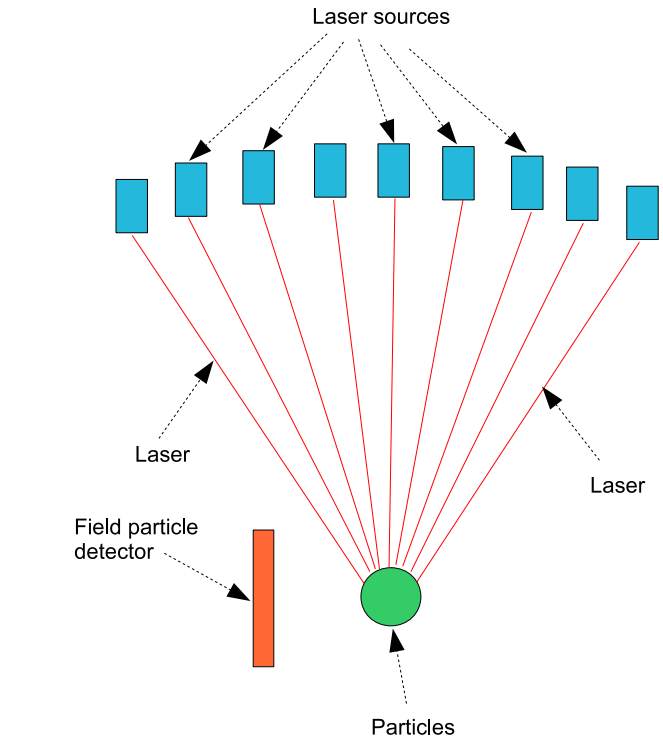


Figure 2.2: Experiment apparatus

2.2 Collecting energy from sea of field particles

It is a scientifically proved fact that movement in specific direction increases the energy of an object. For example:

- A falling object increases its energy. The more distance it travels toward the earth, more energy it collects.
- A falling photon increases its energy.

A movement along a specific path can be regarded as an act which collects energy. Let's assume that the collected energy is in form of field particles. Figure 2.3 illustrates an experiment which can be conducted to verify whether the particles actually collect field particles by moving into a sea of field particles or not. The experiment described here is based on the assumption that:

- The space in which particles exist is like a sea of field particles.
- A particle moves in this field along specific path and collects energy.
- Any disruption in the sea of field particles can also change the amount of energy a field particle can collect.
- The region around a field particle is disrupted to confirm whether the particles actually collect field particle or not.

The proposed experiment apparatus consists of:

- Multiple sources of particles.
- A particle accelerator which accelerate the particle from multiple sources using an energy field.
- A target which is hit by the accelerated particles.

The proposed experiment has two phases. In the first phase of the experiment:

- Particles from a single source are accelerated using a particle accelerator and collided into a target.
- Produced particles are detected.

In the second phase of the experiment:

- Multiple sources of particles are used to produce multiple beams of particles which flow in parallel to one another where there is not a big distance among the beams.
- The purpose of the multiple beams is to disrupt the sea of the field particles from which each beam collects field particle.
- Multiple beams are accelerated using energy fields.
- Produced particles from each of the beams are detected.

Any difference between the result of first and second phase will show that:

- A sea of field particles exists.
- Particles collect field particles by moving in the sea of field particles.
- Any disturbance in the sea of particles impacts the ability of the particle and this also impacts the behavior of the particle.

Figure 2.4 illustrates another experiment which can be conducted to verify the existence of sea of particles. This proposed experiment also has two phases. In the first phase of the experiment:

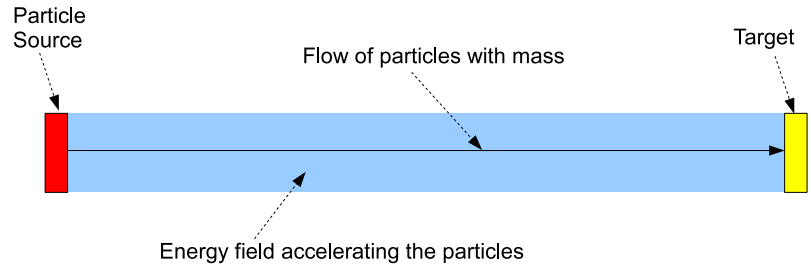
- Particles from a single source are accelerated using a particle accelerator and collided into a target.
- Produced particles are detected.

In the second phase of the experiment:

- Particles from a single source are accelerated using a particle accelerator and collided into a target.
- Multiple laser sources are placed along the accelerator. The laser sources emit the laser in a direction which is at right angle to the direction of motion of the accelerated particles. The purpose of the multiple laser sources is to disrupt the sea of the field particles from which particle beam collects field particle.
- Produced particles from the particle beam are detected.

Any difference between the result of first and second phase will show that:

- A sea of field particles exists.
- Particles collect field particles by moving in the sea of field particles.
- Any disturbance in the sea of particles impacts the ability of the particle and this also impacts the behavior of the particle.



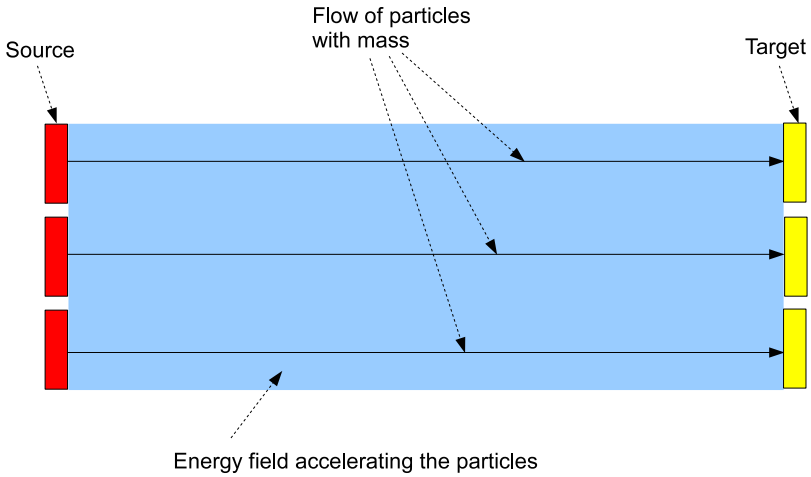


Figure 2.3: Experiment apparatus to confirm existence of sea of field particles

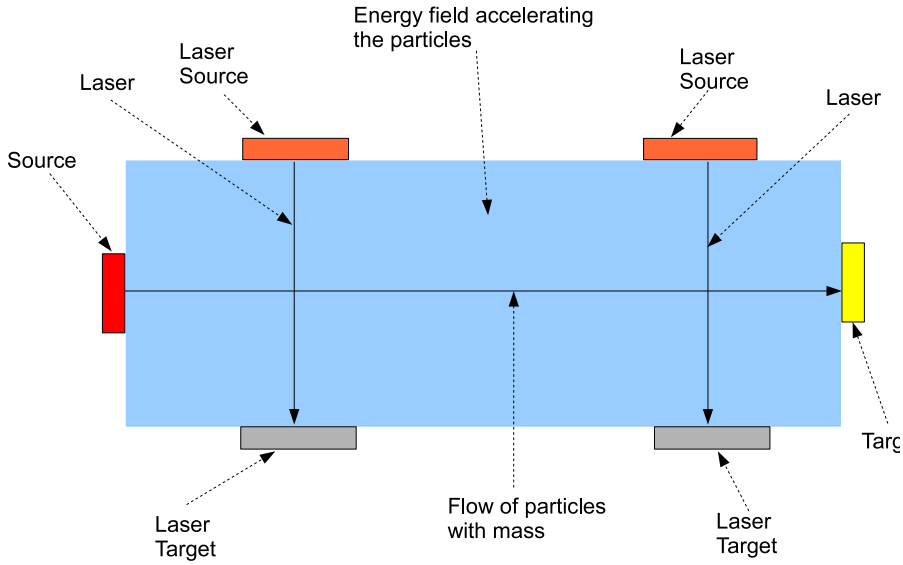


Figure 2.4: Experiment apparatus to confirm existence of sea of field particles

2.3 Existence of field particle with different types of fuel

Figure 2.5 illustrates an experiment which can be conducted to verify whether the massive field particles really exist or not. The proposed experiment is based on the assumption that:

- The particle forming the atom are bound by different bonding strengths.
- The bonds between the particles are realized by transfer of field particles.
- Stronger the bond, the massive is the field particle which realizes the bond.
- Smashing the atom to a target can release the field particles.
- Smashing the atom to a target with strong force can release the field particles which form the stronger bond. As stronger bonds are realized by massive field particles, the detected field particles should be massive.

The proposed experiment apparatus consists of:

- A single source of particles.
- A particle accelerator which accelerate the particle from source using an energy field.
- A target which is hit by the accelerated particles.

In this proposed experiment:

- The particles are accelerated with energy field of different strength.
- The mass of the field particles is detected when the particle is smashed into a target.
- The maximum mass of the detected field particle is measured.

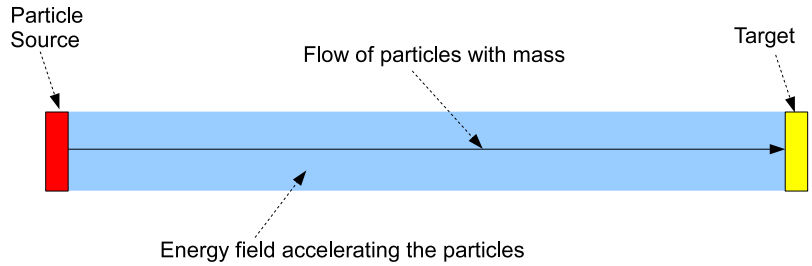
In case, the maximum mass of the detected field particles increases proportionally with the energy of the energy field used to accelerate the field particle (Case A), it can be said that:

- Our assumption that different strength of bonds is realized by field particles of different mass is correct.

- The stronger the bond between the particles is, the more massive the field particle is.

In case , the maximum mass of the detected field particles does not increases proportionally with the energy of the energy field used to accelerate the field particle and it remains constant (Case B), it can be said that:

- Different strengths of bonds between particles are not realized by field particles of different mass.
- Field particles carries different types of fuels.
- Field particles of identical mass carry different quantities of energy.



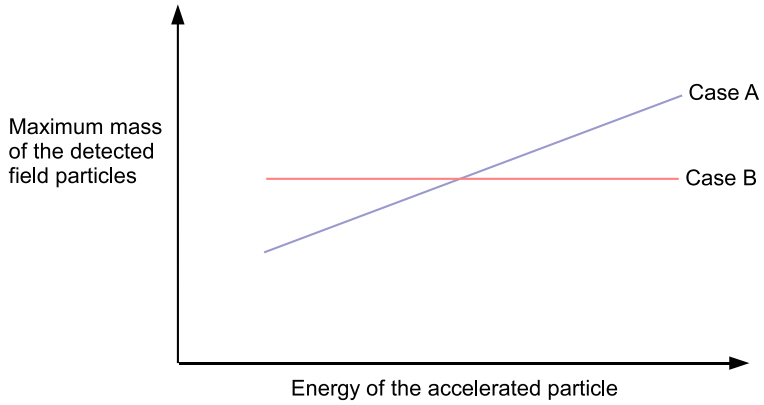


Figure 2.5: Existence of field particles with different types of fuels

2.4 Group behavior of field particles

Figure 2.6 illustrates an experiment which can be conducted to verify whether the group behavior between the field particles really exist or not. The proposed experiment is based on the assumption that:

- The particle forming the atom are bound by different bonding strengths.
- The bonds between the particles are realized by transfer of field particles.
- Stronger the bond, the larger is the number of field particles which realizes the bond.
- Smashing the atom to a target can release the field particles.
- Smashing the atom to a target with strong force can release the field particles which form the stronger bond. As stronger bonds are realized by increased number of field particles, the number of detected field particles should increase.

The proposed experiment apparatus consists of:

- Multiple sources of particles.
- A particle accelerator which accelerate the particle from a single sources using an energy field.
- A target which is hit by the accelerated particles.

In this proposed experiment:

- The particles from different sources are accelerated with energy field of different strength.
- The number of field particles of each type are detected when the particle is smashed into a target.

In case, increasing the strength of the energy field of the accelerator, does not lead to detection of new massive particles, in can be said that:

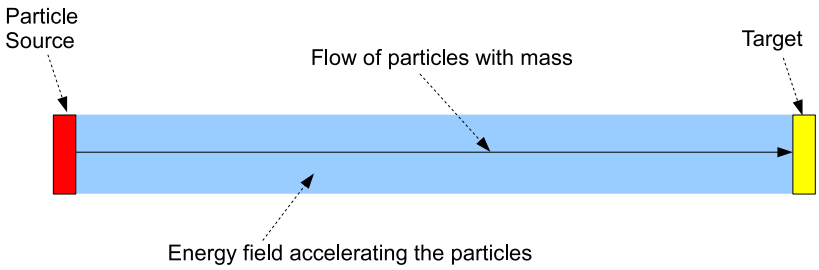
- Massive particles do not exist.
- Stronger bonds are realized by group of non-massive field particles rather than a single massive field particle.

Let's discuss another experimental result, which shows that:

- Increasing the energy of energy field used to accelerate the field particle, does not result in the detection of new massive particles.
- The number of detected field particles is not dependent on the mass of the accelerated particle.

From such observation, it may be concluded that:

- Field particles carry different types of fuels. Not all fuels carry the same amount of energy per unit mass.
- Different arrangement of field particles in the atom, realizes different behaviors.



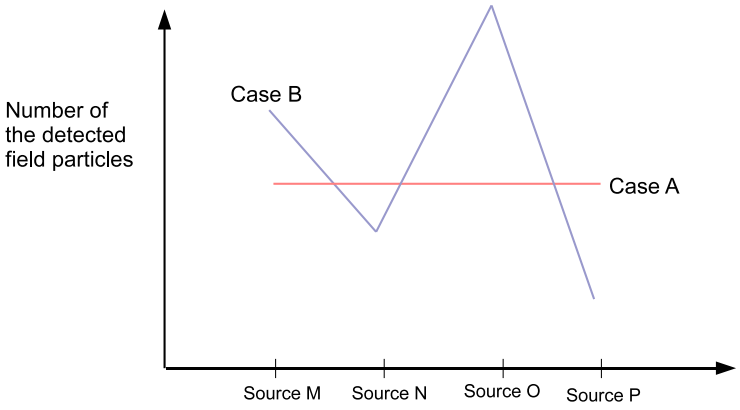


Figure 2.6: Existence of field particles with different types of fuels

Chapter 3

Summary

The publication details some experiments which can be used to probe different concepts described in the book ALTERNATIVE TO MASSIVE PARTICLES, such as:

- Photons can act as replacement of non-zero mass field particles.
- Existence of field particles which carry different types of fuels.
- Group of field particles behaving like a massive field particle.
- Arrangement of field particles realizing different behaviors.
- Presence of sea of field particles.