

# How to really exceed the speed of light

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## Preface

In modern physics, people's explanation for the inability to surpass the speed of light is that the closer to the speed of light, the greater the mass of the object, in turn, more energy is required for acceleration, as a result, it can only approach the speed of light infinitely, but can't exceed the speed of light. The cornerstone of this theory is the mass-velocity relation :

$$m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

。 So, is the mass-velocity relation really an obstacle to exceeding the speed of light? How can we really exceed the speed of light? Please see the text.

## Text

— . **It's not the mass that really limits exceeding the speed of light, it's the speed of the thrust**

According to Newton's laws of motion:  $F=ma$ , we know that an object only accelerates when it is subjected to a force. Such as when a pitcher while pitching, after the ball leaves the hand, it will not be affected by the force from the hand, that is, the maximum speed of the ball is at the moment it leaves the hand, and it is equal to the pushing speed of the hand.

So the same, we already know that the speed of propagation of electromagnetic waves, gravity, electric fields, etc. is the speed of light. In the accelerator of the modern laboratory, we use the above forces which not exceed the speed of light to push any object, then the object cannot exceed the speed of light. It's like a pitcher's hand can only push at 100 km/h, but want the speed of the ball to reach 200 km/h. Even without the constraints of the mass-velocity relation, faster than the speed of light cannot be achieved with accelerators. **The essence is that the speed of the thrust does not exceed the speed of light, so the object being pushed cannot exceed the speed of light.** So, is it really impossible for humans to go faster than the speed of light - not necessarily.

## 二 . Exceed the speed of light by means of multi-stage rockets

When humans put satellites into orbit, most of them use multi-stage rockets for acceleration, so that the rockets reach the first cosmic speed. Similarly, since only external thrust (electromagnetic waves, gravity, electric field, etc.) cannot be used to exceed the speed of light, then **the external thrust can**

**be used to first push the object to near the speed of light, and then the internal thrust (explosive force, atomic force, etc.) can be used to achieve secondary acceleration, so as to exceed to speed of light.**

For example: will a celestial body flying at close to the speed of light at the edge of the universe produce superluminal matter when it explodes? I think the answer is yes. If the universe cannot expand faster than the speed of light at the time of the big bang, it can only be achieved through this kind of secondary acceleration or even multiple acceleration.

So, how to achieve superluminal speed in the laboratory? Perhaps, accelerating the atoms to close to the speed of light, and then exciting the atoms in some way (high temperature, high pressure, etc.) to release their own electrons, so that it is possible to generate electrons with superluminal speed.

Although, with the current science and technology, it is unknown whether electrons can be excited in the direction of motion of atoms, and how to measure whether electrons travel faster than light. However, I believe that human beings will one day be able to break through this problem, or use other methods to achieve superluminal speed, proving this theory is correct.

## **The end**

The speed of light not only limits human cognition, but also limits the pace of human exploration of the universe. One day, human beings will have to leave the earth on which they live, even the solar system and the Milky Way. I hope that my theory can bring hope to people in the future. Let them find their way forward in the vast universe!

**Thank you for reading, the full text is over!**