

## **THE ESSENCE OF SPECIAL RELATIVITY AND ITS INFLUENCE ON SCIENCE, PHILOSOPHY & SOCIETY**

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This paper studies the current status of special relativity in science and philosophy as well as society, and reasons for special relativity to achieve its fame, and presents three academic viewpoints, four public attitudes, comments of known scientists on special relativity, and lists periodicals, scientific meetings, and networks studying questions on special relativity. We summarize various arguments about special relativity, analyze the logic mistakes contained in special relativity, and investigate the authenticities of validations and applications of special relativity. Our study indicates that the essence of special relativity is an incorrect logical consequence from the idealist standpoint and analyzes the harms special relativity has placed on science, philosophy, and society. We advocate the materialistic way of seeking truth based on facts and the publication policy that hundreds of flowers blossom and hundreds of schools of thought contend in order to liberate scientific research from the imprisonment of special relativity. The views of space-time and mass-energy of idealistic special relativity should be abandoned and the views of space-time and mass-energy of materialism should be restored and developed.

*Keywords:* special relativity, philosophy, science, society, space-time view, mass-quality view

As one of the two important contemporary physics rationales, the special relativity (Einstein, 1923; Cheng and Jiang, 1978) (SR) has existed for an entire century. The ordinary people have known special relativity and its author, A. Einstein. It is a compulsory part of the curriculum of higher education. However, the rationality in its foundations and accuracy in its deduction have been constantly suspected (rest of the references). Historically, there exist two completely opposite viewpoints about special relativity. One is that the theory is “a giant” in human knowledge, while the other an intellectual “disaster”. Therefore, it is vitally important to investigate the theory’s essence and its influence on science, philosophy and society. Such an effort will make an unprecedented sense to the development of science, technology and philosophy.

### **1. THE CURRENT STATUS OF SR IN SCIENCE, PHILOSOPHY, AND SOCIETY**

The SR has been in a lofty status since its initial publication in 1905. Today, it occupies the absolutely dominant status in science, philosophy and society. It is seen as one of the fundamental theories of physics. Any assumption and scientific research outcome that conflict the special relativity are considered incorrect. College students majoring in physics must study the special relativity; there are Einstein’s statues, portraits and photos in universities and high schools, due to his establishment of the

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special relativity. It is summoned to learn from Einstein. The United Nation decided that 2005 was the international year of physics and called for a worldwide celebration for the 100<sup>th</sup> anniversary of the SR.

## 2. REASONS FOR THE SR TO BECOME FAMOUS

For the public, one reason is that the SR has become the compulsory content of university physics; secondly, they have influenced by all kinds of experts' views in the media; thirdly, because of a lack of enough understanding and thinking, many people think that the theory is right without knowing any of the details.

The Time, a weekly publication in America, and BBC, English, started a little vortex of "the genius theory". They selected the special relativity as the number one of the top ten greatest scientific achievements of the 20<sup>th</sup> century, worshiped Einstein as the second greatest thinker of the millennium, credited all these to Einstein's vagarious cerebrum, etc.

Chinese media did not like to fall behind. Such titles as those, like "time travel," "the big bang," etc., took the front-page in a short time after Time and BBC. Some people suppress and attack dissimilar learned views, inhibit all educated achievements of criticizing special relativity. Even though, they even vilify criticisms of special relativity as "propagandizing pseudo-science".

With the media's exaggerations of the SR and under the limitation of various critical opinions, the special relativity almost becomes a religion in the scientific community, and Einstein the hierarch.

## 3. THREE ACADEMIC APPRAISALS OF THE SR

- (1) It is correct and one of the two greatest basic discoveries of physics in the 20<sup>th</sup> century.
- (2) It is a combination of righteousness and falsehood.
- (3) It is absurd.

## 4. FOUR PUBLIC MOODS REGARDING THE SR

There are four different public moods regarding the special relativity: support, amendment, opposition and spectating.

(1) Supporter. They allege that the SR is correct and opposing the SR means anti-science. Their occupations are mostly teachers or researchers of the special relativity. Except a few of them who don't know there is something wrong in the special relativity, the most of the supporters understand it is wrong. But they don't admit it due to their reasons like politics, economics, and professional establishments.

(2) Corrector. They think the SR almost correct, but there is some need for corrections. Every time when the SR is used and faces a problem, it will be amended right there since the foundation of the SR is not entirely correct. Therefore, they can make new "paradoxes" forever, and modify the theory indefinitely. They have published and can continue to publish many papers, but their efforts have seemed to be useless.

(3) Objector. They think that the SR should be abolished for its essential absurdity. By doing so, these scholars have obtained little benefit except a few papers maybe.

(4) Spectator. They think no matter whether the SR is wrong or not, it is not their business. Actually, they don't engage in related works with regard to the special relativity. However, the SR's social influence would still involve them eventually with a varied degree of difference.

## 5. FAMOUS SCIENTISTS' VIEWS ON THE SR

Many scientists think THE SR is correct; the most scientists hear that it is correct; and only some know that it is wrong. Media have propagandized mostly from the point of view of admiration. Some different viewpoints have been introduced as follows:

- (1) The Nobel prize committee refused award Einstein the prize for the special relativity.
- (2) Such famous scientists as Lorentz, Poincare, Rutherford etc., all disagree with the SR, who are contemporaries with Einstein.
- (3) Most experimental physical scientists, such as Rahilly, H. Ives, F. Soddy, P. Graneau, N. Graneau, S. Marinov, P. Ppapas, and so on, don't recognize the SR.
- (4) Michelson, the main founder of Michelson-Molen's experiment, felt the pain for all of his lifetime because his own experiment educed the monster of special relativity.
- (5) Dr. L. Essen, who was the director of time frequency department of national laboratory in English, said: "Physicists' common attitude toward special relativity is not really understand it; but since the theory has been widely recognized, it should be mostly correct. However, I must admit, I used to think so myself in the past."
- (6) Dingle, a former supporter of special relativity, did bear away resolutely after finding its bumble, and called on teeth and nail that "science is in the crossroad".
- (7) Alfven, who was an international famous scientist and Nobel laureate, denounced special relativity as merely "a bibelot" and "it blurs the borderline between science and pseudo-science".
- (8) Bernes, an emeritus physics professor at the Texas University, denounced that the SR is "a disaster" and "it is time to stop blindly worshiping special relativity!"
- (9) Lu Hefu, an academician of Chinese Academy of Sciences and a famous theoretical physicist, broke through unnumbered big blocks in his octogenarian and sent out a paper named "Challenges to Einstein". At the end, he wrote the last such words as: "The common editorial department has no courage to publish my paper because they blindly worship Einstein and they are afraid of being considered ignorant of physics".
- (10) Zheng Quan, a professor of research institute of dynamics of Chinese Academy of Sciences, has objected special relativity since 1961. He has published many monographs against the SR.
- (11) Song Jian, who was a former state councilor, director of Chinese National Science and Technology Commission, vice-president of CPPCC, and the president of Chinese academy of Engineering, oppugns boldly Einstein and calls on young scientists daring to innovation: "Over 100 years ago, Albert Einstein had an Ana - 'It is impossible for anything moving faster than light speed' - in his special relativity paper that astonished the entire world of learning. That well-known claim is now called the light barrier in the scientific community. However, this claim has not been proved by any direct experiment. Due to the recent development in space flight technology, it makes scientists analyze and self-reflect on why the speed of spacecraft can't exceed the velocity of light?" (Kong, 2005)
- (12) Professor Jemery Dunning-Davies of Hull University, England, and Professor Stein E. Johansen of Norwegian University of Science and Technology, England, pointed out that nowadays, physical scientists keep on believing the generality of the special relativity theory. As for all the scientific disagreements with sufficiently collected evidence and analytical arguments, they do not inhibit them with their own scientific arguments but inhibit them using the more religious means of dogmatically worshipping Einstein (Chen, 2005).

## 6. MEETINGS, LEARNED PUBLICATIONS AND WEBSITES FOR RESEARCHING PROBLEMS OF SPECIAL RELATIVITY

In North America, symposiums or seminars of "challenging contemporary physics and cosmography" have been held every year by the natural philosophy alliance of international academic structures. The international meeting, sponsored by Russian Academy of Sciences, of criticizing special relativity has been held continuously for more than 6 times, each of which was greater and grander in scale than the

one before. Just as Professor Beckmann, American famous ex-editor in chief of "Energy" and "Galileo Electrodynamics", summarized: "Special relativity still suffers from so extensive resistance after its unprecedented success for nearly 90 years, from Canada to South Africa, from Europe to Australia, from St. Petersburg to Beijing, etc. The magnificent scale and long lasting time duration are rare in history."

On July 29 ~ 30, 2000, an academic meeting on questioning Einstein's special relativity was held in Beijing, China. In 2003, three seminars aiming to negating or exceeding Einstein's special relativity was held in China. They are respectively: "the first annual meeting of Beijing special relativity research sodality," Aug 15 - 17, Beijing; "the second national academic meeting on questions of Einstein's special relativity," Aug 23 - 24, Beijing; and "the international academic meeting of special relativity and innovation in contemporary physics," Oct 11 - 13, Xi'an, China. There have been several other academic meetings about oppugning special relativity since 2004 in China.

The publications of surmounting or objecting to special relativity include: "Galilean Electrodynamics", which has published many papers about surmounting or objecting to special relativity, "Apeiron", "Physics Essays", and "Invention and Innovation." etc.

There are several dozens of websites aiming at surmounting or objecting to special relativity. Among them, there are more than 20 representative websites linked to the website of Beijing special relativity research sodality.

Recently, there are dozens of monographs negating special relativity published at China.

## 7. ARGUMENT FOCI WITH REGARD TO THE SR

The special relativity is right in its entirety? Locally? Or entire wrong? Wrong only locally?

The experts who have "mastered" special relativity think it is a great scientific theory, the foundation of modern physics; it has been proved by experiments and contains no major mistakes. They think that whoever criticizes it is equal to "propagandizing pseudo-science".

Some scholars think that there is something correct in the SR, but there are severe mistakes at the same time. For example, the theory deviates from facts; it is self-contradicting, mathematically puzzling, twisting experiments and misguiding practice. So, it should be exceeded actively.

Some scholars think it is built on the theoretical system of incorrect mathematics foundation and is an illusive theory; and it is really a tale of a tub about getting "experiment confirmation."

## 8. THE THEORETICAL FOUNDATION OF THE SPECIAL RELATIVITY

The incorrectness of special relativity stems from accepting mistakenly the principle of constant light velocity (Einstein, 1923; Cheng and Jiang, 1978).

The principle says that (1) light is always propagated in empty space with a definite velocity  $c$  which is independent of the state of motion of the emitting body (Einstein, 1923); (2) the light velocity measured is the same in the vacuum for any uniform rectilinear motion.

There are the following two understandings with regard to the principle of constant light velocity:

(1) In any inertial reference system, light velocities relative to the system are the same, as long as the light is emitted by the lamp-source fixed to this system.

(2) In any inertial reference system, which moves in a uniform rectilinear motion with other inertial reference systems, the light velocities measured in vacuum are the same, which are emitted by same lamp-source.

The Lorentz coordinate transformation misunderstands the principle of constant light velocity in the following way: For a special light, in all inertial reference systems that are in uniform rectilinear motion with regard to each other, the velocities of the light are the same relative to these inertial reference systems. It ignores the relative motion between different coordinate systems, which results in a series of falsehoods.

A velocity of light exists only as the velocity of transferring signal in special relativity, which has not used any other special qualities of light. Then, if the light velocity for transferring signal is replaced by the velocity of sound, basic assumption of the principle of constant light velocity is changed into the principle of constant sound velocity: sound velocity measured is the same in any inertial reference system with uniform rectilinear motion with regard to others, and if the sound signal replaces light signal during the deduction of the formula, and light velocity replaced by sound velocity, the same result would be gotten, which states that the velocity of any object has to be less than the sound velocity. It is clearly very absurd, because bullet's velocity of motion is faster than the sound velocity and plane's velocity can exceed the sound velocity, also.

In general, people can know and research the world through light with their eyes. However, blind people and bats depend on sound wave to know and research the world. If special relativity were correct, then the result that anything's velocity has to be less than the sound velocity would be obtained for blind people and bats.

Therefore, the theoretical foundation of special relativity is wrong.

## 9. THE PRACTICAL FOUNDATION OF SPECIAL RELATIVITY

(1) With the space-time view in place, Einstein himself had employed only assumed experiments in his lifetime.

(2) Through analyzing more than 60 sets of first-hand data that were employed to prove special relativity with experiments by others, the famous physicist W. Kantor obtained the following result: all these arguments are based on wrong methods and invalid logical reasoning. Professor Huang Zhixun of Communication University of China got the same result.

(3) The theory can't reasonably explain the radial Doppler effect. Doppler Phenomenon is: Optical Doppler red-shift would emerge when a lamp-source is leaving the observer, whereas optical Doppler blue-shift emerges when moving toward the observer. The faster the motion of the light source, the clearer the effect.

(4) Most supporters of special relativity admit that there isn't any experiment observing Lorentz contraction heretofore.

(5) The public thinks that it is a magnificent proof that A-bomb was detonated successfully. However, Thomson and Kaufmann had done massive fruitful work of experiments and theoretical research about mass-velocity relation and mass-energy relation with others before the special relativity was in print in 1905. Austrian physicist Hasenohrl proved the direct proportion relation between mass increased with radiant energy and got the famous formula:  $E \propto m C^2$  in 1904.

## 10. ESSENCE OF SPECIAL RELATIVITY

(1) The "relativity of simultaneity" is a false proposition. It is obtained through exchanging secretly concepts, shifting premises, and confusing feeling and existence, reflection and actuality.

(2) The mathematical foundation of special relativity, namely the Lorentz transformation, is a group of self-contradictory mathematical equations, they do not have any scientific value.

(3) The special relativity has not been proved using any experiment. Some of the so-called "experiment confirmations" are spurious and some are labeled coercively on it.

Special relativity is an absurd theoretical system set up on the bases of wrong hypothesis and mathematics educing. Therefore, it is a "cancer" in the scientific system, bottleneck for further confining scientific development, and a kind of religion in the coat of science.

## 11. HARMS THE SR BROUGHT SCIENCE, PHILOSOPHY & THE SOCIETY

At all times, the experts of special relativity have always prevented the public from understanding the theory. And, the public has held the theory as a great truth. This is despising and violating the public

wisdom and trust. It has become a barrier for scientific development. From micro-world cognitive puzzles to cosmological confusions, the SR has been the cause of the disaster.

The negative influences of special relativity, relativism and “operativistic” positivism have affected all aspects of the society. Nowadays, feudalistic activities and pseudo-sciences are rampant and are closely interrelated with special relativity. At present, the vogue paralogisms, coming from special relativity and its ramification, such as “the 4<sup>th</sup> dimensional space”, “the time tunnel”, “big bang,” “black hole,” etc. are all false theories. All of these theories are representative of ghosts and tales of gods. For example, Stephen Hawking said that he can play cards with Newton and Einstein at the same desk, beautiful girls can flirt with kings of the historical past through time tunnel, just as in those science fiction movies. It is not exaggerating to say that special relativity has been regarded as the backer of all these nonsense. There is no doubted that special relativity is a severe barrier of the contemporary science in general and the basic theoretic development in particular.

The debates on special relativity between supporters and objectors are not only learned arguments but also a drama on the scientific history. And they represent a battle between mentalism and materialism.

## 12. THE FATE OF SPECIAL RELATIVITY

(1) It is a historical necessity to abandon the special relativity. What the famous theoretical physicist Dr. J. P. Wesley said is correct: “The era of special relativity has over”. It can’t be controlled or stopped by any force that science is facing a revolution all-time. Science will evolve definitely and knowledge exploration needs exchanges of ideas. Therefore, different opinions and beliefs are necessary. Without learned arguments and criticisms, scientific development would be in a logjam. Other than that, it is with logical errors and countless mistakes that special relativity suffers from. Science has always been developing through self-reflections and abandoning wrong and obsolete theories or establishing more useful theories and discarding those useless, old beliefs. Today’s fetish activities and pseudo-sciences can’t disappear automatically if the absurd ideas and wrong theoretical conclusions of special relativity are not cleared away. Summarizing in one sentence, we have that the resistance to the development of a spiritual civilization would exist all the same if special relativity is not criticized and barriers of scientific development have been no forsaken. For the continual development of human civilization and science, we have to criticize special relativity and to place it in the right historical place. This effort is relatively close to the scientific future and human fate. As a matter of fact, correcting and abandoning a fundamental theory is an advisable action, since they cost the least with the best and lasting influences and benefits. It is the undertaking with monumental merits that benefit the future and the influence is incogitable for realistic and historical from gaining ground basic scientific knowledge and improving civil diathesis to impulse the development of knowledge economy. Innovation is the spirit and soul of a nation’s development. Chinese scholars have the duty and ability to seize this high point in the fundamental sciences for implementing the strategy of “national rejuvenation through science and education” in this scientific revolution and thrust our country into the ranges of nations that lead the world in science and technology and do some unprecedented historical contributions. Emancipating our minds, seeking for the truth and criticizing special relativity are the necessity for our urgent “national rejuvenation through science and education.”

(2) There have been following conditions for overthrowing special relativity: (i) Through the education of materialism, seeking truths from facts and scientific development view, a batch of scientists are brought up, who realize the mistakes and danger of special relativity and dare to challenge special relativity. (ii) The policies of letting hundreds of flowers blossom, letting hundreds of schools of thought contend and the needs to reform and open-up have created a good social environment for challenging special relativity. (iii) It is discovered that the phenomenon, which special relativity experts claimed that the Newtonian space-time view was “unable to explain” and can only be explained by using special relativity, can in fact be explained with the Newtonian space-time view, and the explanation contains no “paradoxes”. And, (iv) the development of network technology provides a worldwide stage for spreading and exchanging academic thoughts.

(3) It needs a long time to overthrow such a theory as special relativity, because (i) it has caused a profound influence to the public through over 100 years' drumbeating; (ii) supporters of special relativity dominate academic arena. Their main occupation is propagandizing it; (iii) most people don't understand and have the need to deal with special relativity. Therefore, overthrowing it needs some time and some sacrifices of various kinds.

### 13. MATERIALISTIC VIEWS OF SPACE-TIME AND MASS-ENERGY

In order to restore and develop the materialistic views of space-time and mass energy, we must abandon the idealistic space-time view and mass energy view of special relativity.

(1) Time. Time is one of forms of materials' existence. It is duration and sequential order of materials' process of motion. It is the objective existence not relying on people's consciousness and is eternal. Time is unidirectional, evenly flows without a beginning and end.

(2) Space. Space is one of forms of materials' existence. It is infinite and boundless. Space is three dimensional and isotropic.

(3) Mass. Mass is one of materials' essential attributes. It is the quantity of matter contained in an object. Object with zero mass does not exist. As long as it is a material, its mass must be greater than zero.

(4) Energy. Energy is the state attribute of the material in motion. The energy of materials takes different forms. Under certain conditions, the materials' energy can transform mutually between the different forms, but the total energy is invariant.

(5) The relation between time and space. Time is time and space is space, they are all objectively existing. Time is not a function of space and space is not a function of time, either. They are fundamental elements of describing the material world, and can't be altered after their initial creation.

(6) The relation between energy and mass. Mass is mass and energy is energy. They are fundamental elements of describing matters and materials, and can't transform mutually into each other.

(7) Mathematical space and physical space. In mathematics, each multi-dimensional variable may be seen as varying in the multi-dimensional space. In physics, there are the one-dimensional space (line), the two-dimensional space (surface) and the three-dimensional space (body) without any higher dimensional space. The multi-dimensional spaces of mathematics can't be transplanted directly to physics. If the dimension is smaller than or equal to three (not including time), there then is a correspondence between the mathematical space and the physical space.

(8) Source of atomic energy and the releasing principle. Atomic energy comes from the energy internal to an atom. The release of atomic energy is the transfers of photons together with their mass and energy. The mass and energy of the object decrease along with the release of energy from the object. The object, which receives energy, increases in its levels of energy and mass. The process of emitting atomic energy from an object is the same as a gun shooting a bullet, where the bullet is transferred together with mass and energy.

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