Yang: China today not build large collider | Exclusive

2016-09-04 Yang Zhishifenzai

Professor Yang ▶ photograph, a book held by the 2008 version of "Dawn set." Source: Professor Yang Zhenning

Editor's Note:

So far in 2012, the Chinese scientific community, especially in the field of physics, a highly controversial and may even billions ten billion yuan of large-scale projects. Super Collider project proposed by the Institute of High Energy Physics, scientists, representatives of High Energy Institute, Chinese Academy of Sciences researcher Wang Yifang. Support and opposition to this project has. Supported By including the famous mathematician, Fields Medal winner, Harvard University Professor Yau superstring theory and authority, Fields Medal winner Witten (Edward Witten) and the like.

Originally within the physics community controversy recently because of Yau Witten and other activities in China initiated Chinese media reports, leading to support the views of parties spread more widely.

Recently, Professor Yau public micro-channel number in the "old care to talk about geometry" once again express their views, which involves the famous physicist, in 1957 the first Chinese Nobel Prize winner, this

year 94-year-old Professor Yang.

Mr. Yang therefore authorization "Zhishifenzai" published his views.

In order to facilitate us to know the causes of things, "Zhishifenzai" After Yang article attach related articles: Mr Yau opinions description August 29, and was criticized Mr Yau Dr. Wang Mengyuan article (click on the text at the end, "read the original text." view), and August 7, Mr. Yau talk to the Xinhua News Agency reporters.

China today should not build large collider

Yang

August 29 micro-channel public number "old care to talk about geometry," in an article entitled "Yau: Construction on Chinese high energy collider Opinions and answer media questions," he mentioned (mound) in favor of the construction of China super Collider, and I (Yang) against his hard to believe. Wherein the following paragraph:

The basic theory behind these experiments are used Yang doctrine. Each time after the break, we learned of Mr. Yang's more admired! So Yang against the need for further development of high energy physics, unintelligible!

Yau had misunderstood! I have no objection to the continued development of high-energy physics. I objected that China began to build super collider today, for the following reasons:

(A) construction of large collider United States experienced the pain: the United States began in 1989 when the construction of the world's largest collider, beginning budget estimated at $ 3 billion, then increased several times to reach $ 8 billion, causing many objections, Congress in 1992 painfully so terminate this program, wasted about $ 3 billion. This experience has made to popular belief big collider is into the bottomless pit.

Is the world's largest collider at CERN LHC. 2012 6000 physicists with this collider discovered Higgs particle, particle physics is a major contribution to verify the "standard model." Before and after the construction of the LHC with for many years, plus construction costs and other fees add

up to a total of not less than detectors $ 10 billion. IHEP proposed super collider budget can not be less than $ 20 billion.

(Ii) High Energy Initiative to build super collider in China, costs assessed by a number of countries. However, China's share of which will be very considerable. Today, the world marveled at China's GDP has ranked second in the world. But China is still a developing country, per capita GDP has less than Brazil, Mexico or Malaysia, there are hundreds of millions of farmers and migrant workers, as well as environmental problems need to be solved, education, medicine and health problems, and so on. Super collider construction costs odd big, to solve these problems adversely burning brow, I think it should not be considered at present.

(Iii) the construction of super collider will greatly squeeze out other funding basic science, life science, condensed matter physics, astrophysics, and so on.

(Iv) Why are there a lot of positive energy physicists in favor of the construction of super collider it? The following reasons:

A. high-energy physics is an emerging field of World War II, this area seventy years had a brilliant achievement verify the "standard model", so that the human material world of three fundamental forces with in-depth understanding. But there are two big issues remain unresolved:

A) for the rest of the fourth fundamental force of gravity, as well as insight into the basic difficulties.

B) has not yet understand how the unified strength and quality. Two hope to solve this problem, of course is the desire of all physicists.

B. Some high-energy physicists hope to find "supersymmetric particles" with super collider, so as to solve these two problems noted human direction.

But looking for supersymmetric particles have been for many years, totally in vain. Oversized hope to use the collider to find the supersymmetric particles, just a guess a part of the high-energy physicists today. Most physicists, including myself, believe that the existence of supersymmetric particles is just a guess, there is no experimental evidence, hope to use the collider great discovery this conjecture particles plus more just conjecture conjecture.

(V) the past seven decades of high-energy physics major achievement of human life there is really good? No. If IHEP proposed super collider can achieve, but will really succeed in high-energy physics more advance a big step, there is no human life is really good? I think the short to medium term there will be three years, there will be fifty years. And I know that the vast majority of physicists agree with me this statement.

(Vi) establish IHEP China today than thirty years. How to evaluate the thirty years of achievement? Important in today's world of high-energy physicists, the Chinese share of less than one percent, two. Super collider built, its design, and after the completion of the operation and analysis, will from 90% of non-Chinese people to lead. If you can get the Nobel Prize, the winner will be the Chinese people?

(Vii) does not build super collider, high-energy physics is completely no future yet? otherwise. I think there are at least two directions worth exploring: A new look for the accelerator principle. B. Looking wonderful geometry, such as string theory research. Research in these two areas are not so expensive, in line with the general trend in today's world economic development.

(Editor's note: Mr. Yang Wen red marked)

Yau: About China Construction high energy collider Opinions and answer media questions

2016-08-29 Yau

Is faithful to the original, so that the reader control dissent, hereby enclose

Recently, a lot of media attention in China there is no possibility to build the collider, which is a good thing, after all, this thing is the world's scientists are interested in things. Unfortunately, some of the media, eager to express their views, press speculation, not out of nothing, is the interviewee to speak, out of context.

For me personally, it happened a few times this media coverage. For example, in the new financial weekly after I refused their visit, they made a similar visit my manuscript, with imagination and see on the Internet rumors created some news, and based on this to make personal attacks on me.

Recently, reporters continued to ask me some ridiculous question, they want me to dialogue with someone I've never heard of called Wang Mengyuan Sir, I want to comment on his recently wrote an article about the collider. At the same time reporters insist on high-energy physics expert Wang is: because Mr. Wang graduated from Harvard University Physics Department, Dr too. For me, this is in fact a little surprised. Because I serve as professor of physics at Harvard University and the Department of Mathematics, but never heard the name of Mr. Wang (Harvard University in so many years, I was the only official appointed by the president and in the two lines can vote professor). Reporters received a letter, I inquired of the Harvard University Department of Physics of High Energy Physics professors and friends, who knows Mr. Wang? Results no one heard his name. After several visits to find someone finally found the name of his mentor, is an assistant professor in the department of no promotion, no wonder the system of senior high energy physicists do not know Mr. Wang, Mr. Wang is said after his doctoral thesis do not have any interesting article, has over 20 years of doing business. After hearing the news, I feel surprised that China's ability to access technology professionals in media, it is very limited!

Wang is said to have a lot of blame me, I did not care, after all, every week I received some amateur researchers solve a big problem letter, flattering. But the reporter insisted me something to do, Professor Chen Ning Yang, suddenly rose to the sky from the ground, I think it should say a few words.

I know Yang was forty five years. In addition to my teacher, Professor Chern, he has always been my most respected scientist who in the late fifties and sixties statistical physics and high energy physics at work is wonderful, his greatest impact in the promotion of Weyl field work norms to regulate the exchange of non-drinking places theory in high-energy physics of the standard model of the seventies from Europe Morohito completed, can be said that the history of mankind the most profound understanding of nature theory, this model need to use non exchange of gauge field theory.

Fifty years in different parts of Europe and energy to important results every collider was out, can be humbling, because it shows the basic structure of a part of nature. Every breakthrough experiment represents further human understanding of the history of mankind since most want to know: the world is how to build up?

The basic theory behind these experiments are used Yang doctrine, so after each break, we have a better knowledge of Mr. Yang and admiration! So Yang against high energy physics need to have

further development, unintelligible! This is certainly not the general Wall Street traders can understand.

Professor Yang told reporters that the opposition in the scientific community on this fundamental knowledge in the field continued to do Ji WH study, I'm not sure the truth of this statement. After all, I have collected from more than Professor Yang, still not to hear him oppose the establishment of the facts Collider. So remark only as doubtful.

But the important scientific creations include the contribution of many scientists included, does not belong to someone all the truth only in repeated reasoning and experiment under, to get everyone's approval, the ancient Greek philosopher said: I love my teacher, my also love the truth. To explore the universe of the most basic truth, but also have the courage, the perseverance to complete. Western countries, whether scientists or government, in order to understand the mysteries of nature, are willing to unconditionally pay a lot of energy! One hundred years, how much wisdom, how much money invested in some basic science seems useless. But these investments but the achievements of the foundation of Western National Culture today.

Today's China, has been a non-Wu Amon, do not need to influence the lives of the noblest ideals? Are we just in games, in the real estate on the Internet to earn the benefits to be satisfied? I can recall, ancient to modern times have not had such a big country!

We ask ourselves, China's national strength today, can not afford to do this collider it? Chinese leaders say the peaceful rise, can no important cultural implications, not to explore the mysteries of the universe courage? Now opponents in China built a collider scientists, who are experts in experimental high energy physics? Foreign expert opinion Why have deep experience becomes less important?

I and Steve Nadis book has been explained very clearly do collider science, the importance of China, we hope that a rational attitude of this thing!

Interview: I hope that the Great Wall into the sea in building the next generation of giant collider - Interview with Chinese mathematician Shing-Tung Yau

Xinhua News Agency August 7 electric reporter Peng Qian

In China Qinhuangdao Shanhaiguan Great Wall meets the sea embracing.

Fields Medal winner, the famous Chinese mathematician Shing-Tung Yau hoped that experimental physics most important projects - giant collider can be settled here, became the basis for the scientific breakthrough of China's original birthplace and "be tolerant to diversity" as to attract the world's top talent platform.

Currently, the world's largest and highest energy particle accelerator in Geneva, Switzerland and the border region of France Large Hadron CERN collider (LHC), can simulate the initial shape of the universe after the Big Bang on a microscopic scale, help scientists origin of the universe and search for new particles. In 2012, it is in this collider, scientists announced the discovery of what is known as "God particle" Higgs boson, the particle physics has finally completed the so-called "standard model." US "Science" magazine commented that this discovery will be the "standard model" the last piece of the puzzle filled in place, although this finding is unclear future will lead the field of particle physics where, but its major impact on the field of physics can not deny.

The LHC has now reached its design energy, to further seek and find new particles, you need to build higher energy machines. In early 2016, Yau and collaborators book "From the Great Wall to the giant collider," published in China, in addition to the book tells how to change human Richangshenghuo particle physics, also discussed the possibility of China to build giant collider. This major project is currently at the demonstration stage, Yau this final landing project optimism.

"It is possible in the basic sciences major breakthrough in the original place, will help to explore the basic structure of the entire material universe is how it formed," Yau said in an interview with Xinhua News Agency reporter interview. Demonstration of China "annular electron-positron collider (CEPC)" may become the world's largest collider, whose goal is to accurately measure the nature of science and the search for the Higgs boson behind the standard model more basic the laws of physics.

If more energy giant collider can be completed in China, looking for supersymmetric particles, scientists will be the next target. Once supersymmetric particles is found, the entire frontier frontier physics and mathematics will change.

Although the project requires a lot of capital investment, but optimistic about the project Yau huge benefits in terms of technological development and the introduction of talent, "which will cause the migration of Western science camp, far more than build a separate effect of world-class universities."

In the Large Hadron Collider at CERN where, more than 3,000 staff from more than 20 Member States, each year from more than 100 countries and regions, more than 10,000 scientists and visiting scholars to cooperate. Which brings together the world's top talents in the field of particle physics research, generating more than 1,000 doctoral theses each year.

Yau is expected, after the project is completed, there will be at least one thousand fifty-six countries leading scientists to do experiments family moved to China and long-term residents, this will have a profound impact China's basic research.

He believes that the wisdom of thousands of minds gathered here, will "automatically" generated a lot of important, beyond the physical realm of technology and knowledge. As we can not live without the World Wide Web was born at CERN.

"20 years ago, China could not afford to do this, but now China is a rising great power. Collider will be built contribution to international research, as well as world peace and human civilization, but also enhance the international image of China." He said.

Click the end of the text ***"read the original"*** *view was criticized by Mr. Yau Dr. Wang Mengyuan article* ***"High Energy Physics Masterpiece"*** *link http://m.newsmth.net/article/TheoPhys/35749?from=singlemessage&isappinstalled=0*

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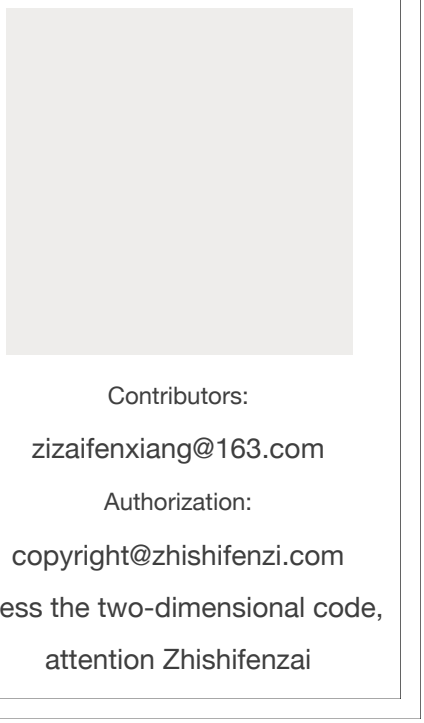

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