

The End of Theoretical Physics

by Dhruba Jyoti Gogoi - Monday, November 14, 2016

<http://gonitsora.com/the-end-of-theoretical-physics/>

When dealing with theoretical physics a question always arises – is there any end of the theoretical physics? In the last century most of the physicists were agreed to the point that theoretical physics will face its end one day. But the million dollar question is that when the subject will converge to an end? If it is not converging to an end then perhaps maximum people will lose their interests on the subject. We really don't expect physics to be infinitely spread up to vague horizon with no proper ending or boundary. But the fact is that Physics or theoretical physics has not reached its end yet. The primary or the most basic problem in theoretical physics is still the same. We are still lacking of a great theory which will effectively explain all the things in theoretical physics. In the beginning of nineteenth century, many physicists were not happy with the quantum revolution. Most of them were pretty much disturbed by the uncertainty things came up in quantum physics. The evolution of quantum physics was a great challenge to those people who believed that theoretical physics was converging to its end point – where nothing will be left to be done. Einstein, Dirac, Schrödinger, etc. many great minds tried to give a proper shape to theoretical physics with their valuable contributions. But still we are far from the end of theoretical physics. People from different fields often ask the theoretical physicists about the end of theoretical physics.

At first we have to be clear with the term 'end of theoretical physics'. It simply means that we might have a complete, consistent and unified theory which would describe all the possible observations. After Dirac's special relativistic formulation of quantum mechanics in 1928, some physicists suggested that the theoretical physics was approaching to an end, a state of completeness.

A truly complete theory, as a set of equations, was expected to solve or explain all the observed phenomena in a deductive manner. This implies that any phenomena could be a special case of the complete theory. According to [Albert Einstein](#) the ultimate aim of physics is to arrive at those universal elementary laws from which cosmos can be built up by pure deduction.

In 1949 in an article titled 'Any Physics Tomorrow?' George Gamow asked that whether the theoretical physics had an end or it would present us broadening horizons giving unlimited possibilities of further explorations. He in his article argued that the theoretical physics might come to an end if the fundamental physics could be based on four particular constants. He took the constants to be c , h , k and an elementary length. The important thing here is that Gamow did not require any single unified theory for announcing the end of fundamental physics. While from about 1912, Gustav Mie and a large number of physicists believed in a single unified field theory. On the way to a converging end point, theoretical physicists introduced The Grand Unification Theory and [String Theory](#), but still these theories are struggling with the challenges in order to survive.

The universe is expanding from the day of its birth and is too large to us to observe. We still do not know if there is an end or it is expanding endlessly. We still do not have a clear idea about the initial stage of the universe. White holes, worm holes, black holes, time travel etc. things are still disturbing our

imaginations and thoughts. We hope one day theoretical physics will be able to solve all the problems and paradoxes and will give a complete idea and explanation to all the things in our observations and thoughts. But will that be the end? Perhaps it won't. It is expected that the universe will make us face new things in the future which will bring new challenges to theoretical physics.

In the views of common people, the end of physics is actually not any grand unified theory or something like that. The end will come when people, government or any funding organizations will lose their interests on this field. But in the present time fundamental physics is popular among the common people which results a strong and bright future of physics.

PDF generated from <http://gonitsora.com/the-end-of-theoretical-physics/>.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.