



REVIEW ARTICLE

PHYSICS AT THE SERVICE OF MANKIND

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ABSTRACT

Physics is not only collection of the facts and principals but it describes how the physics universe behaves. The various principles of physics are now have also been found to be very useful to tackle the problems in non physical sciences. This paper is recollecting the ideas of Physics to find a growing applicability in almost all walks of life and finding remedies in all the problems / threats faced by the society all over the globe.

INTRODUCTION

Physics is an experimental science. Physicists observe phenomena of nature and try to formulate physical theories that relate these phenomena. Theory is an explaining of the natural phenomena based on observations and accepted fundamental principles. To develop a physical theory, a physicist has to learn asking appropriate questions, design and perform relevant experiments to answer the questions, and to draw precise conclusions from the results. Taking into consideration the importance of measurements in physics, many a times physics is regarded as a science of measurements. A measurable quantity is called a physical quantity. So, physics is full of theories and physical models. It should be noted that physics is not simply a collection of facts and principles, but also a process by which we arrive at general principles that describe how the physics universe behaves. Physics being one of the most fundamental Sciences, scientist of all disciplines use ideas of physics to resolve the complex problem in their respective fields. To cite a few examples. The chemists, who study the structure of molecules, paleontologist, who try to reconstruct how dinosaurs walked, and climatologist, who study how human activities affect the atmosphere and oceans. Physics is also the foundation of all branches of engineering and technology.

For quite a long period of time, the ideas of physics were used to explore the other disciplines of Science, Neuro Physics, Medical Physics, Agrophysics, and Chemical Physics being the relatively latest branches. Relatively recently the ideas of Physics have also been found to be very useful to tackle the problems in non physical sciences such as Economics, Social Science, Psychology etc. it is possible to develop new theories in the non physical sciences also. For example, ideas of Physics are used in Economics to develop a model dealing with poverty and its irradiation or to study the fluctuations in share market. This has led to the development of new branches like Econophysics, Econometry etc. the ideas of Physics are also found to be very useful in social campaigns for developing theories which deal with the spread of epidemics like ebola on one hand and with propogation of rumours on the others. The ideas o Physics are also used in Psychology for understanding the behavior of mankind has led to the very promising branch of Experimental Psychology called Psychophysics.

Psychophysics deals with development of theories relate the physics (inanimate) world and psychological (animate) world. In psychophysics, sensory experiences of human beings (Psychological variables i.e. nonphysical variables) are related to physical stimulus (physical variables) to judge the various aspects of personality. The beauty of Psychophysics lies in the fact that it provides a relatively simple experimental approach to the study of the sensory processes going on in human beings. Very recently, it is found that mapping of a personality is possible by analyzing the time the person spent on internet, the

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web sites visited and the frequency of visits, e-mails sent and received etc. not only that, this way of personality mapping has helped to destroy the international network of terrorists more effectively. Very recently a branch of Linguistics called Computational Linguistics is developed by using the ideas in Network Science and now it is apparent that a common grammar for all languages is possible in future.

Irrespective of the progress in Artificial Intelligence (AI), exploring the mystery of mind and consciousness, Penrose (well-known Mathematical Physicist and Philosopher) argues that we lack a fundamentally important insight into Physics, without which we will never be able to comprehend the mind.

Moreover, Penrose suggests, this insight may be the same one that will be required before we can write a most awaited Unified Theory of Everything. In other words, the ideas of Physics find a growing applicability in almost all walks of life and finding remedies in all the problems / threats faced by the society all over the globe.

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