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The Father of Z-Theory and the Current Situation in Science

By Allan Zade

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The Father of Z-Theory and the Current Situation in Science

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I. AN INTERVIEW ABOUT SMA

Mr. Zade, please, introduce yourself to our readers.

Well, I'm an independent researcher who researches in the areas of space, time, and motion. Those areas look so familiar for many people that they do not think about them much. Every step brings a person from one point to another one, and the person passes some space by some time. What can be easier to understand?

However, physical bodies are not the only one sort of things capable of moving through space. Physical signals also show similar ability to make propagation through space. For example, a walking person can cry and listen for the echo. Echo is a well-known "answer" from another object for an incoming signal. A person can determine the distance to the object by the known speed of the sound in the air and traveling time of the signal back and forth between the person and the object.

It is well known that bats use the same principle of orientation in the night or caves.

However, that principle has one huge disadvantage. It uses a known speed of the signal involved in the measurement. If a signal changes its speed significantly, then the measurement shows a significant instrumental error. Modern distance measurement ultrasound devices use some calibration before measurement that includes determination of air temperature, pressure, and humidity to correct such instrumental error.

Does a new device use a different principle of operation?

Yes, it does. A new device, called a Signal Medium Motion Measurement

Apparatus or SMA for a short reference, splits the duration of back and forth propagation of the signal into two independent measurements for forward and backward propagation. As a result, the device becomes able to determine two values after each measurement. Those are the speed of the signal in a given medium and the speed of apparatus-to-medium relative motion. The apparatus uses a known value of the distance between two transponders to make calculations.

Does it improve the precision of measurement?

It certainly does. Moreover, the apparatus needs not any calibration at all in a lab. If the signal changes its speed of propagation in the air or water, then forward and backward measurements change their values according to that change. As a result, the apparatus determines a different speed of the signal, but the determined speed of apparatus regarding the air or water remains precisely correct and has not any change until the apparatus changes its proper speed of motion in the air or water.

It looks incredible. Does it mean the apparatus becomes an error-less measurement device?

Yes, it does. Moreover, any change in a medium used in measurements makes not any impact on the apparatus. For example, suppose the apparatus is installed at the bottom of a flying-boat. In case of landed position, the apparatus determines the speed of the flying-boat in the water. As soon as the aircraft takes off and stays in the air, SMA determines its air-speed without any change in the way of measurement because the apparatus determines the change of the signal in the medium but not any change in apparatus-to-medium relative motion or air-speed. Apparently, in case of wind, the apparatus makes some jump in the measured speed immediately after take-off because of that wind. That happens because the device

determines its speed in the medium instead of the speed regarding the Earth.

It looks beneficial for modern aviation, right?

Yes, it is. It is well known that the airspeed is a significant value for any onboard computer of an aircraft. Moreover, that value defines the lifting force of a wing that depends on wing-to-air motion instead of wing-to-ground motion. Strictly speaking, an onboard computer cannot determine the condition of the aircraft without a proper value of the airspeed. As you know, there were some accidents in aviation caused by frozen Pitot Tubes. Pitot tubes are widely used in aviation to determine the speed of the aircraft in the air. However, they become frozen under some circumstances.

Can SMA become frozen?

No, it cannot be frozen like Pitot tubes. The difference is this. A Pitot tube determines zero speed of the aircraft in the air in case of its frozen condition. That is the biggest problem of that measurement device. SMA, unlike a Pitot tube, determines measurement error in any case when the apparatus becomes unable to determine its motion in a given medium. That situation can be used by the onboard computer to raise the alarm in the cockpit of the aircraft.

And warn the crew that the aircraft becomes frozen, right?

Right, it does possible. As far as I concern, modern aviation has not any device that determines such condition of the aircraft. It is a hazardous condition because the mass of the plane rises quickly because of icing and pulls the plane down more and more. In case of SMA, the signal power droops gradually according to the thickness of ice growing on a transducer. However, that process makes not any change of SMA's ability of operation. It changes only power that reaches another transducer and can be used as an early warning of aircraft icing. That is not the purpose of the SMA, but that feature looks useful for aviation. As you remember, any additional feature of the same device increases the engineering value of that device.

It looks like a universal device that determines the speed of sound in the air regardless the speed of the aircraft, it determines the speed of the plane regardless any change of air condition around the aircraft, and it determines the frozen condition of the aircraft simultaneously, is not it?

Yes, it is. Moreover, information about air condition by the speed of sound in the air can be used by the onboard computer to early detection of air-condition changes. For example, if the air droops its density in some area because of uprising hot air, the aircraft sinks as soon as it reaches that area because the lifting force of its wings drops in direct proportion to air density. In case of SMA, that change can be immediately recognized by the onboard computer giving a possibility to correct condition of wings to compensate changes of air density. As a result, the aircraft remains its altitude regardless of any changes of air-density. In other words, a plane with onboard SMA takes some feeling of air and its "skin," so to say.

Mr. Zade, I thank you very much for a fascinating interview and your explanation of a new measurement device. I hope to have one more meeting with your description of some optical features of your incredibly useful device.

It will be my pleasure to share that information with you.

II. AN INTERVIEW ABOUT AN OPTICAL APPLICATION OF THE APPARATUS

Mr. Zade, can you explain the possible optical application of your invention?

Of course, I can. It will be my pleasure to explain. I mentioned the application of the device onboard of an aircraft in the recent interview. In that case, the apparatus measures the aircraft-to-air speed of relative motion, and it also measures the speed of sound in the air in a given condition of the air. Therefore, the apparatus determines the speed of the aircraft precisely correct regardless of any changes of the physical condition of the air, the altitude of the plane, and other possible variations of air condition.

It looks straightforward to understand. Is there any hidden problem here?

Yes. There is something unusual here. Suppose now this. The SMA was mounted onboard of an aircraft as a rotatable device

that can change its orientation in the airflow. In that case, the apparatus determines the full speed of the plane in case of its orientation parallel to the airflow. In case of rotation, it determines a component speed that depends on the angle between the apparatus' direction of measurement and the direction of the airflow.

In case of orthogonal orientation, the apparatus determines zero speed relative to the air because the airflow goes perpendicular to the direction of measurement and the component speed of the device in the air droops to zero. Further rotation gradually increases the component speed determined by the apparatus until it reaches the maximum value with a negative sign as soon as the device reaches the opposite orientation in the airflow.

There is nothing unusual here yet! It is quite understandable too.

Yes, it looks logical, but there is something unusual in that measurement. If the apparatus summarizes duration of signal propagation *in the forward and backward direction*, that value remains constant for any orientation of the apparatus in case of a constant speed of the aircraft regarding the air.

What does it mean?

It means this. Such measurement becomes possible in only one condition when the apparatus makes measurements of signal propagation separately in forward and backward direction. In case of summarized analysis of duration of signal propagation, or case of a round-trip experiment, or experiment with a mirroring signal, and so on, that measurement gives a constant value regardless orientation of the device in the airflow.

Don't you mean that the device cannot determine its speed in the air-flow by a round-trip experiment?

Yes, I do mean that. That problem can be solved only by two one-way measurements of signal propagation in the forward and backward direction taken separately.

Is it a severe problem?

Yes, the problem is a deadly serious one because calculations made in 19 century for such experiments gave another result that *does not match physical tests*. The problem comes back to Michelson's argumentation

that a round-trip experiment can be used to detect apparatus-to-medium relative motion by rotation of the measurement apparatus in the medium.

As you remember, Michelson made that test himself with a so-called null result. Many decades later, a similar acoustic experiment was conducted by a German researcher Norbert Feist who made the publication of the result of the experiment in 2010 and confirmed similar null-result *in an acoustic environment*.

In other words, both experiments show the same result that a round-trip experiment cannot be used to detect apparatus-to-medium relative motion.

Don't you mean that the Michelson's optical experiment was incorrect because the method of measurement he used was incompatible with the target of analysis???

That is precisely correct. Moreover, Michelson himself made a few mistakes unforgivable to a serious researcher. He forgot the scientific method of research that requires *physical support* of any idea coming from the human mind. In case of the Michelson experiment, the experiment destroyed his point of view immediately. Despite that fact, Michelson insisted that his speculations and calculations are correct and the test is wrong, and the optical device doesn't show the result that he likes or expects to see.

Moreover, he never conducts similar experimenter in an acoustic environment. As a result, his mistake remains in his mind *undetectable for him*. The situation remains unchanged until Norbert Feist conducted an identical experiment in the acoustic environment. He used a rotatable measurement device with an ultrasonic transducer or range detector mounted on the top of his BMW car. The experiment has shown the same so-called null result that appears as a constant duration of signal propagation in any direction at any given speed of the vehicle.

In other words, both experiments destroy Michelson's speculations and calculations. In the language of physics, that means *falsification* of a given idea by the tests. In other words, regarding the scientific method, any idea coming from the human mind should be confirmed by a proper physical experiment. Any suggestion that contradicts experimental results becomes

falsified and cannot be used as a scientific one.

It looks incredible! Don't you mean that the acoustic experiment destroys Michelson's point of view?

Yes, I mean that. Michelson himself made a grave mistake leaving acoustic signals unnoticed in his experiments and concentrated only on optical tests.

Can your apparatus make correct measurement in case of optical signals?

Yes, it can. Suppose now this. The observer changes the aircraft to a planet and uses the same method of measurement to determine planet-to-space relative motion. The observer should use two apparatuses, in that case, to split a round-trip experiment into two one-way experiments to assess the propagation of light signal separately in the forward and backward direction. The difference between the duration of each test and a known distance between the apparatuses gives a possibility to determine the speed of the observer regarding the space and correct speed of the signal in space.

There is no such possibility in Michelson's time because one way of light propagation can be measured only by modern devices like atomic clocks. Those devices use cesium-based oscillators to determine the duration of any estimated period. They have enough frequency and stability of oscillations to be used in the one-way measurement of light signals.

In case of SMA, two apparatuses make local synchronization before measurement. After synchronization, one of them takes a remote location, and both devices start measurements.

What if a traditional measurement of light propagation be conducted along with SMA experiment?

In that case, a traditional experiment gives a full duration of light propagation from the light source to the mirror and back again. As I mentioned above, that way of measurement ever gives a constant value because of the constant speed of light propagation in space and constant speed of the planet regarding space. That precisely matches the Norbert Feist acoustic experiment. However, SMA splits that round-trip experiment into two one-way experiments and determines the duration of each test separately. The apparatuses use those values

and the value of a known distance between them to determine the speed of apparatus-to-space relative motion and light-to-space relative motion. The sum of those values of duration ever coincides with the value of the duration of a round-trip experiment conducted within the same distance between the light source and the mirror by *any other instrument*.

Wait a sec! The speed of light in any direction supposed to be a constant! Don't you mean that constant is not constant at all?

The speed of light measured by SMA depends on physical properties of a given medium. As soon as the medium changes its physical properties, the speed of light changes in that medium accordingly to those changes. For example, if SMA uses water instead of air, the speed of the light signal in water becomes different. However, the speed of apparatus-to-space remains constant as well as in case of acoustic measurement with *the various physical condition of the air*.

Moreover, one-way duration of the experiment with light depends on the orientation of the measurement device, I mean SMA, regarding the direction of motion of the planet in the medium, I mean space. That aspect is similar to the acoustic application of SMA. As a result, SMA determines the speed of Earth-to-space relative motion. Michelson cannot reach that result because he used *only round-trip experiments*, as I mentioned above. The one-way experiments with light give a component speed of motion regarding a given medium; I mean space. Therefore, the value of that component speed depends on the orientation of the direction of measurement. As a result, the rotation of the planet changes that value gradually during the period of rotation of the planet regarding space, I mean sidereal rotation of the Earth.

Is there any evidence about such a possibility from the past?

Yes, there is specific evidence from the past coming from *De Witte experiments*. De Witte conducted some measurements in on-way propagation of radio-frequency between two atomic clocks in Brussels in 1991. A distance of 1.5 kilometers separated the clocks. De Witte conducted his experiments for many days and determined the sidereal deviation of the one-way duration of signal

propagation between those clocks. Such a result looks like a sinusoidal deviation from a mean duration of signal propagation. That natural experiment shows an essential difference between one-way and round-trip tests and destroys Einstein's postulate about equality of one-way and round-trip experiments.

That experiment contradicts relativity! It is impossible!

There is not any right or wrong experiment. According to *the scientific method*, any idea coming from the human mind should be confirmed by a proper experiment. If that experiment or experiments show a different result than predicted by a given theory, then the theory becomes *falsified* by the experiment. For instance, the speed of light claimed to be constant in any direction by the theory of relativity. As I mentioned above, that point of view can be supported by a round-trip experiment with light. However, all one-way experiments falsify that point of view.

The idea of that constant comes from the human mind, and physical experiments destroy it. The idea was born at the time when the humankind had not any possibility to conduct one-way experiments with light. Therefore, that inability was challenged by Einstein's postulate about equality of one-way and round-trip tests. Modern measurement devices *falsify that point of view and destroy the entire theory*.

That is a great circle of comprehension that appears again and again. Each time a new measurement device or an unusual observation leads to a destruction of the old point of view and creation of a new one that becomes compatible with new evidences coming from new measurement devices.

III. AN INTERVIEW ABOUT THE SITUATION WITH THE INVENTION AND THE SITUATION IN SCIENCE IN GENERAL

Mr. Zade, can you explain the reaction of the scientific community on your research?

Of course, I can. The first part of my research was published in the UK and US in the form of a book titled 'Z-theory and its applications.' The book was published in 2011. The book explains the core features of the theory and the law of their application to the explanation of relevant natural phenomena.

Later research appeared as my articles published in various international scientific journals. The result was positive, and I steadily became a member of some international scientific communities like COSIS, Research Gate, and a Fellow of Science Frontier Research Council of Open Association of Research Society after the publication of my articles in Global Journals.

In 2016-2017 years, I participated many scientific discussions in Research Gate trying to find some scientist who can think independently and accept a new paradigm shown in my articles. To my surprise, the general reaction shown a so-called null result. I have seen many situations when other participants of a discussion 'run away' as soon as I explained to them some experiments that they never knew like De Witte and Norbert Feist experiments.

I was also surprised by the point of view shown by some scientists that shows their preferred 'way of action in physics.' They told me this. 'If they don't know something, they should ask a question to a well-known person in that area of research.' Such point of view contradicts the scientific method because that method supported knowledge coming from experiments instead of ideas coming from the human mind and established the priority of experiments instead of limitation of human comprehension.

Such point of view never leads to the right way of understanding of science because it suppresses experimental science by human ideas. A similar point of view led Michelson to his mistake in the interpretation of his famous experiment when Michelson himself insisted that his device should show the result predicted by his mind. He was so blind with his calculations that he could not see any other possibility of an explanation of the experiment. He was so sure in his point of view that he never conducted an acoustic experiment similar to his optical test to observe and analyze their similarity.

Einstein made the situation even worse, claiming his "gedankenexperiment" or thought experiment as 'the primary tool for experimentation in the areas inaccessible to physical experiments.' That was one more grave violation of the scientific method that led to the illusion of similarity between one-way and round-trip experiments. *There is not any physical experiment that confirms such point of view.*

It looks like the general population of scientists shares some ideas 'because someone else produced them.' For example, Michelson was not a scientist at the moment when he conducted his experiment. Einstein was a clerk in the patent office at the moment of publication of his theory. In other words, new ideas came to science from independent researchers who had a keen interest to gain scientific knowledge.

However, the scientific method remains correct ever. Later, new independent researchers use that method to reach a new way of knowledge and explanation of the old experiments. There is nothing strange here. The scientific method by itself is accessible for everyone without any exception. Moreover, modern technologies often exceed the limits of the 19th-century technological level when basic ideas of modern physics were born. Some of those technologies destroy old ideas. A paradigm shift appears as soon as new technology or a measurement device shows something 'impossible' in the theoretical framework of science.

For example, a telescope invented by Galileo Galley turned the science upside down because it shows something that cannot be seen by a naked eye like mountains on the Moon. Some people of that time refused to use that device because "they knew that the Moon is flat and cannot be covered with mountains."

Does it mean a similar situation for today?

I'm afraid it means the same situation ever. People don't like to use the scientific method regardless of their position. They think that their knowledge is ever correct and cannot be wrong. Invalidation of basic knowledge in the human mind leads to tremendous psychological discomfort and "lack of orientation" sometimes. That means the situation after each paradigm shift when all well-known points of reference shift their locations. In every such case, the human mind tries uselessly to "stabilize the situation" by a rejection of a new idea at any cost. Sometimes, that reaction appears as a logical counterarguments "established" against a new idea. For example, "the Earth cannot be spherical because all water *flows down* from the spherical Earth and the Earth becomes dry. The Earth is not dry; therefore, it is not spherical." Such a way of "argumentation"

shows only a critical misunderstanding of a new idea.

Sometimes, ideas, including scientific concepts, which exist in the human mind for a long time, transform to dogmas. A dogma is a point of view that cannot be logically checked or falsified by a scientific method. Dogmas often become a part of a belief system.

For example, if a scientist answers a question about a new idea like "I do not believe it!", it means a reference to his belief system instead of rational application of the scientific method. A belief system has an embedded problem. An experiment cannot falsify it.

Does it affect your research and patent application?

Yes, it does. The problem comes from the paralysis of physics in front of explanation of some experiments that falsify fundamental knowledge. Those knowledge are not modern because they were born in the 19th century when technical and technological, I mean instrumental, level was incomparable with the modern one. Some experiments were impossible to conduct that time. One way experiments are one good example.

It is possible today to conduct all those experiments and explain all of them from one point of view that destroys all exception and restriction of old theories. However, that is the biggest problem for today because there is no one from official science, laboratory, research center and so on who likes to conduct those experiments. That happens because any attempt to do such experiments leads to immediate *invalidation* of all dissertations and scientific credentials if all personnel of such a lab because "the Earth is not dry; therefore it cannot be spherical."

It also affects my communication with the European Patent Office (EPO). I send them, again and again, my explanation and references to De Witte and Norbert Feist experiments and their results. However, they do not like that explanation and continue to argue that the disclosed apparatus cannot be feasible. Moreover, they refuse to contact Norbert Feist directly. That person lives and works in German not far from the EPO headquarter. They do not like to see and analyze his acoustic measurement device that does exist and described in his research paper (2010) because that device falsifies a well-

established point of view. I think they need an official publication from a research lab, but I don't know any lab that can conduct a similar experiment because that experiment falsifies relativity.

Here, look at this! It is my detailed answer on EPO request for explanation. But it changed nothing in their "argumentation." (Allan gave us a document. See the next article. He also gave us a few pictures from his archive. See the third article.)

It makes the situation worse. We have a device that can be used in any air-tube by any student and falsifies relativity, but there is not any textbook for many years that mentions the experiment because that experiment shows "unexplainable results."

We have De Witte experiment that also destroys relativity. It is possible to conduct that experiment again. It is also possible to use my consultations regarding any of those experiments. It is possible also to make optical or acoustic SMA and conduct experiments with that device to confirm its way of operation. However, I'm telling again; I don't see any lab that wishes to perform those experiments.

Do not you mean that the situation "smells kerosene"?

I think you are right. If an expert refuses analysis of a physical device that stays in contrary to his point of view, then the situation means a severe violation of the scientific method. The problem comes from physics itself. They can disregard physical experiments conducted by other researchers, but that way never changes the situation because similar experiments show identical results ever despite any person who conducts them. That is a fundamental principle of science; an experiment shows the same result in any hands. In other words, if an experiment conducted by a student contradicts the point of view of a professor, then the professor's point of view becomes wrong. I mean, lie becomes detectable quickly *because nature cannot be trustful with one person and lie to others.*

Do you the only one independent researcher who works in the area of one-way experiments?

Not at all. There are many of them or us. There are a few groups and independent researchers interested in that area of knowledge. For example, Hanna Edwards, a

researcher from Germany, has a similar interest. She knows me in person by a few Skype and e-mail conversations. She asks questions to me from time to time regarding her articles and ideas. Her point of view does not match my one exactly. Therefore, we have ever something to discuss. As far as I concern, no lab permits her to conduct any one-way experiment yet. However, she had a few articles published in the Elsevier journal about one-way experiments.

Another good example is Dr. Chahill from Australia, who put his article about De Witte experiments to arXiv. I think he could not find the right publisher interested in that subject. He mentioned a strange thing in his article that scientists criticized De Witte because of his experiments. That is more than unusual for science because the researcher conducted experiments in full accordance with the scientific method. That result disproves a well-established theory. Therefore, the theory *becomes wrong.*

Is it possible to change the situation?

I think it is possible. However, we need new areas of science that can be split into three areas or zones. Those are alpha, beta, and gamma zones. Alpha zone means all core knowledge known for science. That zone is widely used for education purpose. Beta zone stays close to the alpha zone and includes all research that derives from alpha-zone and satay consistent with alpha-zone.

Gamma-zone includes everything that contradicts alpha-zone and consequently cannot be researched by knowledge exists in that zone and all derived research from beta-zone. Beta-zone expands gradually by the development of instruments. Everything looks fine until a new device shows something that contradicts basic knowledge or alpha-zone. That means a situation of breaking the limit of beta-zone and experiments fall into gamma-zone. Further research in that area leads to a paradigm shift that destroys the ancient knowledge of alpha-zone and replaces them by the new one compatible with some part of gamma-zone. In that case, beta-zone increases its body and incorporates those new experiments from gamma-zone because a new paradigm explains them. That process becomes endless in science because every experiment with a new measurement device should be supposed to be an edge-experiment that destroys the edge of beta-zone or *the comprehension horizon* and comes to gamma-zone.

The best example of such a situation is CERN “faster than light neutrino experiment.” As you remember, there is no one from the scientific community who recognized that test as a one-way experiment and supposed to have something unusual from such research. That experiment became a one-way because the neutrino ray goes one direction and *never comes back to the point of origin*.

Therefore, we need independent laboratories or scientific personnel, first of all, independent of dogmas of alpha-zone. Those laboratories should be accessible for everyone to conduct experiments from gamma-zone.

That is the only one possible solution of the problem from my point of view.