Scientific Research Publishing

Open Journal of Earthquake Research, 2025, 14(1), 1-6
https://www.scirp.org/journal/ojer
ISSN Online: 2169-9631
ISSN Print: 2169-9623

The Scientific Impotence of Modern Seismology. Causes of Decline and Necessary Measures for the Revival of Earthquake Science

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How to cite this paper: Bychkov, S. (2025) The Scientific Impotence of Modern Seismology. Causes of Decline and Necessary Measures for the Revival of Earthquake Science. *Open Journal of Earthquake Research*, **14**, 1-6.
https://doi.org/10.4236/ojer.2025.141001

Received: November 11, 2024
Accepted: February 8, 2025
Published: February 11, 2025

Abstract

It is widely recognized by many within the scientific community that the field of seismology faces challenges in aligning with established scientific practices for studying earthquakes. Some views may suggest a reliance on methods that resemble divination rather than sound scientific inquiry. Despite efforts to understand seismic phenomena over the past three centuries [1], progress in seismology has been perceived as somewhat stagnant. Criticisms have been raised about certain theories, such as Mr. Reid's Elastic Recoil theory from 1910 [2], and its purported advancements in comprehending seismic processes. While acknowledging various perspectives on this matter [3]-[7], it is important to reflect on the historical context and potential limitations in our understanding. Addressing concerns raised within the discipline involves examining educational practices and fostering a rigorous academic environment to promote scientific excellence. This article aims to explore the underlying factors contributing to the current state of seismology, offering insights into overcoming challenges and fostering advancements that benefit the scientific community and society as a whole.

Keywords

Earthquake, Seismology, Elastic Recoil, Earth Sciences

1. Introduction

People live, love, create families, and build flourishing cities, but one day earthquakes come and cities with all their inhabitants turn into dust and tears of distraught people. Humanity is doing everything possible to protect itself from underground disasters, but time is passing, and there has been no progress in under-

standing the causes and mechanisms of underground cataclysms, which gives people hope for a bright future. Scientists do not give up, and every year they develop more and more new hypotheses and methods for predicting earthquakes, but they do not work. The problem, which seemed simple and not complicated within the boundaries of the theory of the occurrence of earthquakes as interpreted by Mr. Reid, in which two tectonic plates (blocks) rub against each other and "strike sparks" in harsh reality turned into an unsolvable mystery of nature. No matter how much seismologists struggle to solve it with the crumbs of funds that their governments allocate, geophysicists have not invented anything worthy of serious attention in the three-hundred-year history of earthquake research, and every next devastating earthquake turns out to be like a bolt from the blue for discouraged researchers. People who are tired of the promises of seismologists have suspicions: Is there a solution to this puzzle in principle and are seismologists tempting humanity with vain expectations? As our history and our experience show us, they tempt us, they tempt us even more!

2. Discussion

So what is the reason for such a scientific disaster? Why is there such a sad state of affairs in seismology? Why is humanity somehow conquering the expanses of space, deciphering the secrets of the device of nuclear communications, getting close to the foundation of the device, and understanding the functioning of artificial intelligence and other significant aspects of fundamental and applied sciences, and seismology, as it dragged "wooden plow through the fields", and trudges, without any signs of improvement in the study of earthquake processes, to which indicates a complete lack of reliable research results. And you can't argue with such sad results, or rather their absence! And who wants to argue, especially from those offended professors from seismology whom we talked about in the abstract, let them answer a simple question: How much energy (electron volts), in accordance with the theory of Elastic recoil, can accumulate and realize in the form of a seismic release a cubic meter of basalt (granite, etc.) of a tectonic plate or any other block rocks under elastic deformation in one hour, day, year, century? With all due respect to all scientists in the world, not only seismologists, but also scientists of other sciences will not be able to answer this question. Nobody! And then how can we move seismology forward if we don't even know the amount of energy accumulated by the mountain range, its sources, the scientific principles of earthquake energy formation, and the mechanism of its implementation? That is, we do not know the cornerstones of seismology and its main basis – the energy supply of the seismicity process! In this case, what knowledge do we pass on to students studying seismology? Myths and fairy tales? Or do we sincerely hope and expect that if we look at the curved line drawn by the seismograph for an infinitely long time, then one day we will be able to deduce the long-awaited earthquake formula? We can't wait! In order to at least find ways to move seismology forward, you need knowledge, knowledge, and more knowledge! And where will they come from

professors of seismology, if they have graduated from one of the many faculties of Earth sciences and can reason and be competent only in a narrow area of their specialization? But seismology is not a science that can be taken "offhand" and with all sincere respect for other sciences, it is not physics and mathematics, it is not chemistry and geography, it is not quantum mechanics, and applied sciences such as mechanical engineering, civil engineering, agronomy, and cosmonautics, seismology is much more than each of these disciplines. Judge for yourself. In order to at least begin to imagine the possible trajectories of tectonic plates and to understand the enormous influence on these movements of the properties of the rocks composing tectonic plates, a seismologist needs to know the structure of the planet, and therefore the geology of the Earth. So a seismologist must be a very good geologist. Speaking about the properties of rocks in a broad sense of this important issue, it is necessary to thoroughly know solid state physics and chemistry, because electrons and electromagnetic fields are the carriers of rock energy. Not knowing the structure of the atom, chemical reactions and bonds, the dynamics of defect motion, the postulates of N. Bohr [8], the theory of self-induction by Henry Joseph [9], the theory of chain reactions by N. Semenov and S. Hinshelwood [10], the theory of magnetic effects by L. Buchachenko [11], as well as the works of other geniuses of physics and chemistry, it is impossible to be a seismologist! This means that a seismologist needs very solid knowledge of physics and chemistry in addition to knowledge of geology. Speaking about the energy of a rock massif and the energy of earthquakes, a seismologist needs to know the laws of thermodynamics, that is, a seismologist is simply obliged to understand the laws of the transition of one type of energy into another and have clear concepts borrowed from physics: thermodynamic systems, thermodynamic equilibrium, thermodynamic processes related to temperature, heat, thermodynamic work, internal energy, entropy, etc. [12]. It was the vast gaps in knowledge of thermodynamics, namely the fundamental principles of the Minimum energy of any system, the principle of Saint-Venant, and the principle of Le Chatelier-Brown-Brown that served as a trap for Mr. Reid and his modern followers. And since all the fundamental principles are interconnected, complement each other, and form something whole, the violation of any of them leads to a false understanding of the nature of the process, as happened with the theory of Elastic recoil. If a seismologist "floats" in the knowledge of the basics of thermodynamics and does not understand the fundamental principles of science, then one should not expect results from his scientific activity, because all he is capable of in this case is pseudoscientific conclusions. What else does a seismologist need to know? There are many fluids in the earth's crust and mantle in the form of gases, liquids, and magma, which directly and significantly, and possibly to a decisive extent, affect seismic processes, that is, a real seismologist needs to know hydrodynamics and understand the processes and laws of movement of magma and other fluids through underground channels and related hydraulic and cavitation shocks and other hydrodynamic phenomena. It is high time for scientists to understand that our planet is a complex hydrodynamic machine, the mechanisms of which work ac-

cording to the laws of hydrodynamics and volcanism is the result of a hydrodynamic cycle. That is, a seismologist must also be a hydrodynamic engineer [13]. Plus, in order to understand the processes leading to the destruction of rocks and the formation of faults, shifts, synclines, and other geological disturbances in the earth's crust, a seismologist needs to know the basics of mining, the processes of drilling and blasting rocks and be sure to go down into several deep mines to see the underside of our planet and well imagine the kingdom of crushed rocks or aged "in line with the" layers of the earth's crust at great depth. That is, it is extremely necessary for a seismologist to have the knowledge and experience of a mining engineer. Plus, in order to understand the deformation processes of tectonic plates and rock blocks and clearly imagine the vectors and magnitudes of the resulting loads, it is necessary to understand well and confidently know the theoretical mechanics and methods of calculating loads, which means you need to thoroughly know theoretical mechanics and be a mathematician, otherwise professors of seismology and tomorrow and after tomorrow will teach students fairy tales Reid's grandfather said that tectonic plates contract under the influence of loads, ignoring the fact that according to the laws of mechanics, a body whose length is much greater than its thickness, it is impossible to compress, because instead of compression, you will get a bend with all the consequences that follow from this! Our respected professors from seismology still in their lectures tirelessly compress and compress tectonic plates and blocks of rocks in their fantasies and are not a bit embarrassed by their ignorance and do not understand their scientific fiasco. Finally, if we take into account the calculations of Paul Kuroda and the well-known fact of the existence of natural nuclear reactors [14] [15] in the rocks of the Oklo uranium deposit in Gabon, then a seismologist, quite unexpectedly, needs to be a nuclear physicist [16] [17]! Based on the above, the question arises: How many professors of seismology on a global scale have sufficient qualifications for their teaching and scientific activities? Judging by the results of achievements in the study of seismology problems, there are only a few. Thousands of other pundits continue their Elastic bacchanalia at universities, forever closing the research horizon to students, and condemning them to scientific impotence.

3. Conclusion

Financial losses in catastrophic earthquakes are so great that several percent of these amounts would more than cover the cost of training seismology students with competent professors with multidisciplinary knowledge, equipping modern laboratories, and setting up field camps and research centers around the world. Financing geophysics should become a priority in any country, especially since the side effects of such research in the form of hydrothermal energy will bring significant benefits to our society. Moreover, this cannot be postponed for later, because no one knows when the next disaster will happen and how many hundreds of thousands of lives it will take. It should also be noted that in studying the problems of seismology, editors of scientific journals related to Earth sciences in one way or another should play a large, we would even say a gigantic role. These

should be far-sighted and brave people who will not be afraid to print discussion articles and works that take out "garbage from the hut of geophysicists." Editors of geosciences journals should stop the practice of "looking into the mouth" of academic luminaries and entrust the review of incoming works by scientists who do not have sufficient qualifications because otherwise, we will never break out of the circle outlined by Mr. Reid and his theory of Elastic Returns. And stop hiding our heads in the sand, we either admit the mistakes we made in studying the problems of seismology, or we continue to confidently sail along the "elastic" current into a dead end of geophysical problems.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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