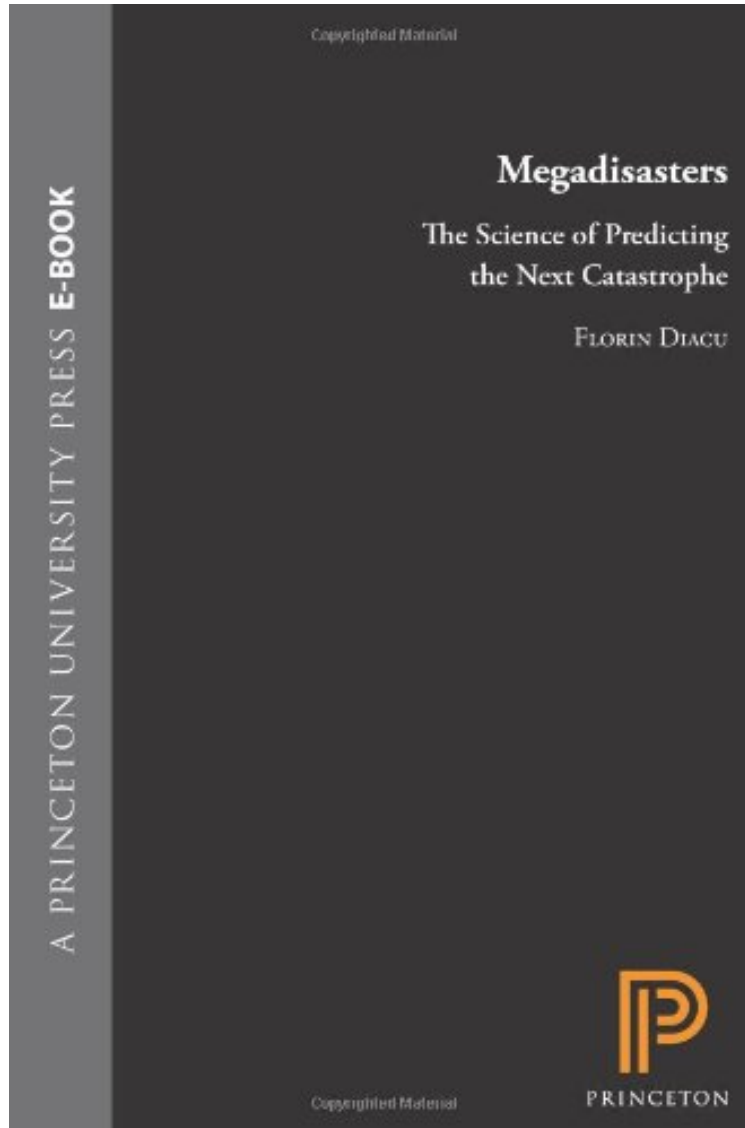


[Free download] Megadisasters: The Science of Predicting the Next Catastrophe

Megadisasters: The Science of Predicting the Next Catastrophe

Florin Diacu

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Florin Diacu : Megadisasters: The Science of Predicting the Next Catastrophe before purchasing it in order to gauge whether or not it would be worth my time, and all praised Megadisasters: The Science of Predicting the Next Catastrophe:

0 of 0 people found the following review helpful. Joyful Science is both more critical AND more open-minded! By Heraclitan Fire I can't give this fairly solid book a fourth star only because I expect a lot from this particular author. The author is open-minded about the frontiers of science (having a veritable philosophy of science instinct!) and he was

brave enough to write on Fomenko (with whom he shares some of the same physics and mathematics expertise - namely differential equations and their use in celestial mechanics and optimization problems). Brave because doing so risked career suicide. No one is allowed to touch Fomenko. Period. This being said, Diacu seems very aware about methodological issues across disciplines and is aware of a host of evaluative pitfalls. As is clear in the chapter on climate change - he remains keenly aware regarding the quite flexible borders between science and pseudo-science on both sides of Caesar's coin: those holy idols overdue for dashing versus those working hypotheses rashly disdained. This is a brave quality in Diacu. He's a brave writer. Brings to mind Poincare or Reichenbach. But how thoroughgoing does Diacu prove to be here in this book on disaster as it relates to science and scientific prediction, modeling, theorizing, etc? It is with this sort of hope for sobriety and parsimony that he attempts to take a position of authority to parse what has been only prematurely labeled as science when it comes to prediction from what is really and truly more cutting edge in the science of tsunamis, earthquakes, volcanoes, hurricanes, climate change, meteor impact, economic breakdown, and pandemics. Though "cutting edge" by no means indicates anything completely exhaustive in this account, he does cover a few of the brighter and more well-known modern attempts - various innovators which are bent on taking uncertainty to task with impressive tools and methods. Why should one find his work here just a little disappointing? Here it is: I silently hoped that Diacu would address the fringe hypothesis of 'earth-expansion' and its hundered year history which is still yet alive and kicking. Albeit, kicking a bit feverishly. Taking earth-expansion seriously would certainly play a pivotal role in explanation, research, and prediction of earthquakes, volcanoes, tsunamis, and climate change and illustrate that there have been attempts to give a more unifying account of unexpected geophysical change. But, alas, it was omitted. This omission is a little flunky for Diacu's caliber. For the same reason that a historian refusing a serious dialogue with Fomenko's work is certainly evidence of academic isolationism. (So too for the geosciences and its spurned earth-expansion counterpart.) Perhaps my somewhat unrealistic expectation that he go here was due to a belief that he would leave no stone unturned in his investigations. Earth-expansion theory is a huge stone. Worth lifting. This stone's importance is reinforced by the broadest criteria opened up by the keener logic and methodology a historian of the philosophy of science obtains - which leaves no new or old guess out of the scuffle and is especially unforgiving when forays broach the large-scale (or extremely fuzzy quantum scale) speculative domains (astrophysics, quantum physics, geoscience (especially geodesy)) - where measurement and repeatability are not the strongest bets. Ie, where measurement is very often a disservice to naked and honest steadfast methodologies and yet flouted as incontestable after some broad observations, speculative unification, or maybe even two trials. And of all the counterpoints to dominating theories, earth-expansion is among the larger, more comprehensive paradigms known with quite a healthy history of supporters and still a few modern hold-outs. The particular beef Diacu ought to take issue with in all these 'separate domains of catastrophes' is their lack of real experimentally proven predictive power *AS A SYMPTOM* of the sort of methodology employed to establish "facts" in the field. This is quite the case in archaeology, philology, migration theory, etc. And how much more is this the case in geophysics? Even as we watch the very satellites we trust to make measurements (eg, recently GRACE) exhibit great demands of software correction, a great deal less repeatability and cross-analysis, or only a handful of years of data to be sourced to make ludicrously firm claims - as is frequently seen in academic papers? Is it really so hard to believe that some of the underlying assumptions in the contemporary account of geophysicists are patently premature or philosophically inconsistent? As such, it is hard to imagine why so much is taken for granted when from the final fruit of these disciplines we see Diacu struggling with how much these disciplines fail to bring results on their own basis - neither predictive power nor geoscience unification. If in the second edition he at least outlines the ramifications of seriously entertaining earth-expansion, then I'll gladly revise the rating to 5 stars! Without it. It's a solid 3 stars. The "quest for a safer planet" intention will not serve science when, at the expense of professionals who've devoted their lives to geoscience, we ignore the few voices who've upheld an incredible account of evidence pointing elsewhere. (He can start here: <http://www.brera.unimi.it/SISFA/atti/1996/scalera.html>). If he hasn't committed career suicide already, perhaps he's willing to go the full distance and consider the scientific accounts which completely upset our idea of the world. At least as much as the New Chronology. To return to Roberto Mantovani and do the historical depth he is known for Diacu would certainly push us to discover more about the underlying realities we may be forced to address only too late. He and everyone else from Cascadia to the New Madrid fault ought indeed be a bit worried of megadistasters. But would he even know that the intracontinental rift for the New Madrid fault has sparse support by a plate tectonics paradigm making it easy for writers on the topic to overlook the trove of data, say, housed in Memphis today ...and reaching back to settler accounts of the winter of 1811-2? Perhaps only the Ring of Fire matters to him which makes him parochial in the same way historians who are unconcerned with a critical examination of the roots of chronology will always remain parochial however reputable. Is this not symptomatic of someone hijacked by plate tectonics at the expense of all else? Since when was Diacu down with inheriting a cliché?!? 4 of 4 people found the following review helpful. Attempts at Predicting Catastrophes By George Poirier In a nearly perfect world, impending disasters could be predicted in such an accurate and timely manner that affected people could be safely evacuated and human lives would be saved. But we don't live in such a world and terrible disasters do occur, often unexpectedly and with dreadful consequences. In an effort to remedy this situation, scientists

in different fields are attempting to understand the various phenomena that can lead to such disasters in order to try and predict their occurrences. In this book, eight types of disasters are examined: tsunamis, earthquakes, volcanic eruptions, hurricanes, rapid climate change, cosmic impacts, financial crashes and pandemics. The author, an applied mathematician with specialization in differential equations, is certainly in his element in discussing most of these cases. Each disaster is covered in its own chapter. In each case, the author gives a brief historical background, presents the scientists who are involved and summarizes the progress, or lack thereof, that has been made. It becomes very clear that some disasters are more predictable than others. Also, the power and limitations of mathematical modelling are well illustrated. The writing style is clear, authoritative, level-headed, accessible and engaging. This book can be enjoyed by anyone, especially those interested in science's efforts in predicting disasters with the ultimate purpose of saving human lives. 0 of 0 people found the following review helpful. calamityBy G.I.ForbesThis is a pseudo-scientific book that describes disasters of various types and whether they could have been predicted or prevented and in the future will science be advanced enough for preventative action to be taken.The chaos that occurs with disasters prevents prediction now or in the future is discussedThe types of disasters listed include tsunamis,earthquakes,volcanoes,typhoons,climate change,cosmic impact and pandemics (this is the poorest section and is not well described)A useful insight into the uncontrollable workings of our planet.

Can we predict cataclysmic disasters such as earthquakes, volcanic eruptions, or stock market crashes? The Indian Ocean tsunami of 2004 claimed more than 200,000 lives. Hurricane Katrina killed over 1,800 people and devastated the city of New Orleans. The recent global financial crisis has cost corporations and ordinary people around the world billions of dollars. Megadisasters is a book that asks why catastrophes such as these catch us by surprise, and reveals the history and groundbreaking science behind efforts to forecast major disasters and minimize their destruction. Each chapter of this exciting and eye-opening book explores a particular type of cataclysmic event and the research surrounding it, including earthquakes, tsunamis, volcanic eruptions, hurricanes, rapid climate change, collisions with asteroids or comets, pandemics, and financial crashes. Florin Diacu tells the harrowing true stories of people impacted by these terrible events, and of the scientists racing against time to predict when the next big disaster will strike. He describes the mathematical models that are so critical to understanding the laws of nature and foretelling potentially lethal phenomena, the history of modeling and its prospects for success in the future, and the enormous challenges to scientific prediction posed by the chaos phenomenon, which is the high instability that underlies many processes around us. Yielding new insights into the perils that can touch every one of us, Megadisasters shows how the science of predicting disasters holds the promise of a safer and brighter tomorrow.

From Publishers WeeklyStarred . Author and mathematics professor Diacu (Celestial Encounters: The Origins of Chaos and Stability) presents a civilian-friendly guide to methods, like numerical modeling, used to understand, quantify, and possibly predict disasters. Written simply but without being simplistic, Diacu's text is driven by enthusiasm for his field and its potential for solving some of humanity's big problems. In nine chapters, Diacu examines natural disasters-volcanic eruptions, earthquakes, hurricanes and typhoons, tsunamis and floods-but also takes time to examine human-driven disasters: financial collapse, pandemic disease, and climate change. Diacu chronicles the history of each field of prediction clearly and concisely, illustrating how developments in mathematics drove developments in geology, and vice-versa, as well as the unpredictable variables as dictated by "the monkey in the machine," chaos theory. A chapter on climate change is particularly insightful and important. Few non-scientists understand how climate models work, but it would dispel a lot of skepticism if they did; Diacu manages it in just seven pages, in language anyone can understand.From BooklistThe science behind predicting catastrophes involves differential equations, but math-phobics, have no fear. Mathematician Diacu writes a whole book about applying them without a single string of numbers, letters, and bamboozling symbols. OK, maybe defining differential equation somewhere in passing would've been nice, but Diacu's little histories of predicting eight varieties of disaster are pretty absorbing and informative, so well live. At least, we hope so, and thanks to the development of mathematical models of how tsunamis, earthquakes, volcanic eruptions, hurricanes, rapid climate change, comet and asteroid collisions with the earth, pandemics, and financial crashes come about, we can be increasingly confident that we will. Two kinds of catastrophe are much less predictable than others: market crashes and earthquakes, because they are extremely chaotic and only now is the satellite-enabled Global Positioning System locating the junctions of tectonic plates with any precision. Easing into each chapter with a bit of personal history, Diacu warmly assures us in conclusion that scores of people are working to hone predictive mathematical tools ever sharper. --Ray Olson One of Choice's Outstanding Academic Titles for 2010"He is at his best when discussing matters closest to his own field, celestial mathematics; and he makes a compelling case for developing the means, as the Russians appear to be doing, of batting asteroids out of humanity's ballpark."--Trevor Butterworth, Wall Street Journal"Author and mathematics professor Diacu (Celestial Encounters: The Origins of Chaos and Stability) presents a civilian-friendly guide to methods, like numerical modeling, used to understand, quantify, and possibly predict disasters. Written simply but without being simplistic, Diacu's text is driven by enthusiasm for his field and its potential for solving some of humanity's big problems. In nine

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