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**Mathematics of Planet Earth.** Edited by Hans G. Kaper and Christiane Rousseau. SIAM, Philadelphia, 2015. \$39.00. xii+206pp., soft-cover. ISBN 978-1-61197-370-9. <https://doi.org/10.1137/1.9781611973716>.

In 2013, the Mathematics of Planet Earth program (MPE2013) initiated a worldwide partnership that brought together mathematical scientists and educators from over 150 scientific organizations with goals around research, education, and outreach. This book is a curated and edited collection of over 100 short articles from a blog that was launched as part of the program, with each post grouped loosely into one of the four themes associated with the program: *A Planet to Discover*, *A Planet Supporting Life*, *A Planet Organized by Humans*, and *A Planet at Risk*. The titles of these categories give a hint of the broad nature of the text and its contents. In fact, it is so broad that it is difficult to describe in a few sentences. Perhaps it can be framed as a memorial to the spirit of the MPE2013 movement. One of the great successes of MPE2013 was that it inspired members of the mathematical sciences community at all stages in their careers to learn about and contribute to an expanding interdisciplinary scientific field. The result was a collective effort to learn new things from the ground up, and this resulted in new long-lasting collaborations and the eventual formation of a new SIAM activity group, among other things. This spirit is captured in the present anthology; among its diverse contents are scientists' expositions of topics within their expertise alongside individual explorations into interesting, though sometimes seemingly haphazard, questions like "Why do Earthquakes Change the Speed of Rotation of the Earth?" The text also contains historical anecdotes, a news article, a cartoon, and an aptly chosen Dr. Seuss poem, among many other contributions. In blog post after blog post, the argument for the practical relevance of mathematics and/or mathematical thinking is strengthened.

As was the aim of the original blog, most of the articles are understandable by a general audience and many contain no equa-

tions at all, while in contrast a few will be accessible only to those with an appropriate mathematical background. Most of the contributions were written by members of universities or research institutes. A fair number of the articles were written by the editors themselves, who also took on the task of steering and editing the blog in real time with the help of a small editorial team. Along with their variety in content, the articles vary widely in length and depth. Contributions range from a few sentences to a few pages, and most posts are entirely self-contained. The variety of writing styles represented in the text adds to the ease and enjoyment of reading.

I found the most delightful and unique aspects of the book to lie in the articles that weave storytelling and personal anecdote with mathematical exposition. The melancholy imagery arising from Ilya Zaliapin's mathematical and philosophical discussion of the ubiquity of certain branching structures in nature (*Thinking of Trees*) is one example. Another example is Robert Miller's *There Will Always be a Gulf Stream—An Exercise in Singular Perturbation Technique*, which recounts his buying a \$6 textbook at Powell's before launching into a perturbation methods argument supporting the statement in the title of the piece. These are two of the few articles that contain advanced mathematics, but they are still expository enough to compel the casual reader.

Given the format of the text, it is perhaps not surprising that it is not a comprehensive introduction to the very broad topic of Planet Earth, and nor does it always have an eye to complete rigour. However, forcing the book to fit such parameters would likely distract from its readability and the portrayal of the organic nature of the MPE2013 movement and blog. Like most blogs, the text is sprinkled with links to external videos and websites ranging from academic platforms to social media websites like YouTube and Wikipedia. I found the supplementary material included in these links to be complementary and enjoyable; examples include the YouTube channel showcasing the chaos experiments associated with Danforth's ar-

ticle *Lorenz's Discovery of Chaos* as well as the link to Schelling's social segregation model discussed in *Modeling and Understanding Social Segregation* by Gauvin and Nadal. However, some of the "blogginess" is lost by having to type in a long website address and a number of the external links are now outdated or broken. That said, I had no trouble finding the supporting material using appropriate keyword searches.

This atypical text might best be de-

scribed as a "coffee-table book," providing a collection of interesting trivia, jumping-off points for further exploration, and material for lively dinner discussions. Its contents can be taken in a few pages at a time. Most of all, it is a lovely tribute to the beginning of an important and continually evolving movement: the Mathematics of Planet Earth.

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