

their subject in a historic perspective. The results on the collapse of a scalar field presents not only the discovery, but also this has slightly diverted his attention on the left hand side.

The survey begins with M. MacCallum's. This survey is increasingly convincing as the author felt that the subject of his to indulge in a more detailed study by several examples of models in

structure on homoclinic chaos in cosmology. An interesting discussion of the orbits of an unstable equilibrium point. Unfortunately this physical problem to his title, the reader somewhat puzzled.

R. Tavakol on mixing properties. The authors find a reduction of the cosmic density universes.

The book for chaos in the Mixmaster Universe. Misner, describes how his interest in the days.

A helpful companion to many rela-

Zoltan Perjes
Department of Physics
Santa Barbara, CA 93106
USA

Book Review

Aspects of General Relativity and Mathematical Physics (Proceedings of a Conference in honor of Jerzy Plebański). Edited by *Tonatiuh Matos*. Can be ordered from the editor, Centro de Investigacion y de estudios avanzados del IPN, Av. Instituto Politecnico Nacional, 2508 Col. San Pedro Zacatenco, México D.F. C. P. 07300, Mexico. 226p, \$20.00

Jerzy Plebański's first paper was published in 1953 and his latest so far, the 157th, was in 1994. Consequently, his career has covered essentially the second half of the 20th century, a period of great progress in general relativity. Jerzy's contribution to this field, and to related mathematical areas, has indeed been significant and often seminal, so the publication of this volume with contributions from his many students and collaborators is certainly welcome to workers in the field.

The book begins with a sketch of his life and work, starting with his early days in Poland in the difficult times during and shortly after the Second World War. During this period, Jerzy worked extensively with Leopold Infeld on problems in electrodynamics, and, of course, general relativity. A few years later Jerzy spent some time in the United States. After returning to Poland in 1960 Jerzy found it necessary to leave for ideological reasons and came to Mexico where he stayed for five years. He was then ordered by Polish authorities back to his homeland where he remained until 1973, when he finally came to Mexico to settle for good. This Mexican period undoubtedly has been Jerzy's most productive time during which he produced his important papers on the Einstein and Einstein-Maxwell equations, including especially the structure of the differential equations themselves, exact solutions, complex differential form and spinorial representations, classification results, and complex space-times ("heavens").

This volume lists only the titles and references to Jerzy's 157 works. Some early papers deal with topics in optics, quantum and quantum field theory, especially spinor aspects. These are in English, Polish and German. There is a series of papers with Infeld and others showing the de-

velopment of his interests in general relativity, especially the equations of motion of point particles. Next are papers involving algebraic and other work related to classifications and construction of exact solutions. This includes early work on tetrad and spinorial representations. From 1974 to the present (the Mexican period) there is a notable concentration on the areas for which he is perhaps best known: exact solutions, symmetries and classification results, including complex space-times and heavens, and general properties of classes of differential equations. Sprinkled through this period are papers on electromagnetic theory, quantum theory, spinor fields, etc. A few papers are in Spanish, so he has published in at least four languages.

The bulk of the book consists of conference contributions by students and collaborators of Jerzy and for the most part reflect his major interests. Roughly, these papers fall into several identifiable classes. Perhaps the area with the most contributions is a wide one dealing with symmetries and specific techniques for generating exact solutions. Here are papers by Finley, Price, Ernst, Sussman, Matos, Covarrubias, Villalba, and García Díaz. Problems in related theories, including Kaluza-Klein and even supersymmetry are considered by Maciás, Germán, Obregón, Carretero-González, Chauvet, Nuñez Yépez, Salas Brito, and Camacho. Techniques involving complex structures, complex two-forms, duality, and the Newman-Penrose formalism are discussed by Torros del Castillo, Goldberg, Capovilla, Przanowski, Goldblatt. Papers by Estabrook, Kozameh, Iyer, and Newman look at questions related to surfaces and immersions. A variety of topics including quantum cosmology, Toda lattice techniques, motions, supermatrices, and Monte Carlo calculations are discussed by Ryan, Torrence, Bazański, Urrutia, Morales, and Wahlquist. In all, there are 22 papers with 32 authors. These works reflect current developments in our understanding of general relativity and related mathematical topics which are directly related to the important and extensive contributions of Jerzy Plebański. As is true of Jerzy's own works, these are of high quality. This compendium should indeed provide a valuable reference for anyone working in general relativity and related differential equation techniques.

Carl H. Brans
 E-mail: brans@beta.loyno.edu
 Loyola University
 New Orleans
 Louisiana 70118, USA

1. All manuscripts (hard copy) in triplicate.
 Editor:

(these manuscripts may also be submitted as hard copy only) in triplicate.
 experimental aspects of general relativity.

2. Submission is a representation that the author has the right to publish the work for publication elsewhere. A statement to Plenum Publishing Corporation supply the necessary forms for this purpose in the act of submitting a manuscript for the dissemination of research results.
3. Type double-spaced with generous margins. Have in typesetting this material. Two duplicates of the manuscript should be submitted. Two duplicates of the manuscript should be as neat and legible as possible.
4. A title page is to be provided and suggested running head. The affiliation (state or nation) and should be typed in 80 characters (including spaces) at the top of the title page should include the author's name and address.
proofs.
5. Illustrations (photographs, drawings, and submitted in a form with the author's name, the title for illustrations should be typed in contrast. Drawings should be prepared on separate sheets.
6. Tables should be numbered (with Arabic numerals) and should be typed on a separate sheet if necessary.
7. Footnotes should be numbered and placed at the end of the article in which they refer. Place a line and a numeral without parentheses for the reference.
8. References should be listed numerically in order of citation. Arabic numerals enclosed in square brackets should be avoided or used sparingly. Name and location, and applicable journal should be given.
9. Page proofs are sent to the designated editor. Manuscript copy, hopefully with corrections, should be returned to the editor.
10. The journal makes no page charge. Authors are sent with proofs.
11. Authors are entirely responsible for the accuracy of their work. The editor reserves the right to introduce changes.