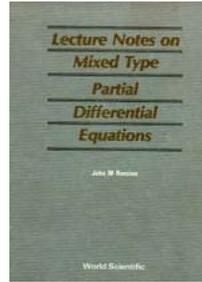


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LECTURE NOTES ON MIXED TYPE PARTIAL DIFFERENTIAL EQUATIONS

by **John M Rassias** (*The National University of Athens*)

This book discusses various parts of the theory of mixed type partial differential equations with boundary conditions such as: Chaplygin's classical dynamical equation of mixed type, the theory of regularity of solutions in the sense of Tricomi, Tricomi's fundamental idea and one-dimensional singular integral equations on non-Carleman type, Gellerstedt's characteristic problem and Frankl's non-characteristic problem, Bitsadze and Lavrentjev's mixed type boundary value problems, quasi-regularity of solutions in the classical sense. Some of the latest results of the author are also presented in this book.

Contents:

- The Dynamical Equation of Mixed Type
- The Tricomi Problem
- Regularity of Solutions (in the sense of Tricomi)
- Fundamental Idea of Tricomi
- The Bitsadze-Lavrentjev Problem
- The Gellerstedt Problem
- The Frankl Problem
- Quasi-Regularity of Solutions (in the sense of Protter)
- The a, b, c Energy Integral Method
- Weak (or Strong) Solutions in the Classical Sense
- Well Posedness
- A Selection of New Results
- Open Problems
- Basic Books

Readership: Undergraduate, graduate students and research workers in mathematics and physics.

References for Francesco Tricomi by:

School of Mathematics and Statistics,

University of St Andrews, Scotland

Books:

1. F G Tricomi, *La mia vita di matematico attraverso la cronistoria dei miei lavori (Bibliografia commentata 1916-1967)* (Padova, 1967).

Articles:

2. G C Dong and M Y Chi, Influence of Tricomi's mathematical work in China, in *Mixed type equations* (Leipzig, 1986),
 3. G Fichera, Francesco Giacomo Tricomi (on the ninetieth anniversary of his birth) (Russian), *Uspekhi Mat. Nauk* **42** (3)(255) (1987), 203-211.
 4. G Fichera, Francesco Giacomo Tricomi, in *Mathematical analysis – Editor: John Michael Rassias* (Leipzig, 1985), 6-31.
 5. G Fichera, Francesco Giacomo Tricomi (Italian), *Atti Accad. Sci. Torino Cl. Sci. Fis. Mat. Natur.* **114** (1-2) (1980/81), 37-48.
 6. G Fichera, Francesco Giacomo Tricomi (Italian), *Atti Accad. Naz. Lincei Rend. Cl. Sci. Fis. Mat. Natur.* (8) **66** (5) (1979), 467-483.
 7. S G Mikhlin, On Tricomi's works on integral equations, in *Mixed type equations-Editor: John Michael Rassias* (Leipzig, 1986), 195-204.
 8. U Richard, Francesco Giacomo Tricomi (Italian), *Boll. Un. Mat. Ital. A* (6) **1** (1) (1982), 159-170.
 9. F G Tricomi, Principles and maxims from a notebook of Francesco G Tricomi (1897-1978) (Italian), *Archimede* **31** (1-2) (1979), 15-16.
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