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Partial
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Equations

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PARTIAL DIFFERENTIAL EQUATIONS

Part 1

Editors of the Volume

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Part 1

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PREFACE

The 36th Semester “Partial Differential Equations” was held at the Stefan Banach International Mathematical Center in Warsaw from September 17 to December 17, 1990.

In total, 184 mathematicians from 18 countries participated in the semester. They presented 245 lectures in the following sessions:

Nonlinear elliptic and parabolic equations and systems (G. M. Lieberman, M. Giaquinta, J. Souček, O. John, J. Stara, A. V. Ivanov, N. Kutev, N. M. Ivochkina, M. Wiegner, S. I. Pokhozhaev, I. Skrypnik, L. Véron, H. Begehr, M. Chipot, T. N. Rozhkovskaya).

Global solutions to hyperbolic and parabolic equations for small data (Y. Shibata, R. Racke, V. Georgiev, B. V. Kapitonov).

Global solutions and blow-ups for parabolic equations (M. Fila, J. Filo, M. Chipot, A. Milani, H. Amann).

Elliptic and parabolic equations in domains with corners and edges (M. Dauge, M. Costabel, J. Rossmann, V. A. Solonnikov, V. A. Kondrat’ev, Yu. V. Egorov, S. Nicaise, A. A. Lyashenko).

Singular pdes (T. Ôaku, G. Bengel, R. Felix, K. Aomoto, B. Ziemian, N. H. Duc).

Geometric methods in nonlinear pdes (P. R. Popivanov, M. Atiyah, J. Bourguignon, J. Eichhorn, J. Eells, L. Lemaire).

Generalized functions and pseudodifferential theories (R. Gorenflo, P. Kim, T. D. Van, H. Komatsu, S. Miyatake, T. Gramchev, A. Kaneko, A. M. Lopatnikov, H. M. Maire).

The equations of continuous media (in particular those of hydrodynamics) were given an extensive treatment. The main topics discussed were:

Free surface problems (V. A. Solonnikov, K. Pileckas, J. Sokolovsky, D. Kröner, R. Finn, Y. Teramoto, Bui An Ton, G. Łukaszewicz, W. M. Zajączkowski).

Existence of global solutions and their asymptotic behaviour (I. Straskraba, M. Wiegner, T. Miyakawa, G. Prouse, P. Secchi).

Some other problems in pdes were discussed by G. V. Demidenko, S. N. Glazotov, F. Hélein, G. E. Karadzhov, V. I. Kostin, A. M. Khludnev, A. I. Kozhanov, I. Laine, R. Picard, S. G. Pyatkov, O. Rey and W. Sickel.

The sessions were directed by Bogdan Bojarski (chairman of the organizing committee), Wojciech Zajączkowski and Bogdan Ziemian.

This volume contains some of the papers contributed by the lecturers. The papers were accepted by the editors in final form before March, 1992.

June, 1992

Editors

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