

Preface

The first edition of Nečas's book *Les méthodes directes en théorie des équations elliptiques* was published in 1967 simultaneously by Academia, the Publishing House of the Czechoslovak Academy of Sciences in Prague, and by Masson in Paris. The publication was unique in that it gave quite a general up-to-date account of Direct Methods (also called Variational Methods) in the context of linear elliptic equations and systems of arbitrary order in Lipschitz domains, together with an excellent general introduction to the theory of Sobolev Spaces. The topics the book addresses were always among the main research interests of J. Nečas (together with non-linear problems). The book was written in French not only because French was J. Nečas's favorite language, but also due to his collaboration with J. L. Lions and the Paris school. After the success of the French edition the translations into English and Russian were discussed at several points, but for various reasons this work was completed only recently.

I am very grateful to J. Nečas's colleagues and friends, particularly to W. Jäger, E. Zeidler, P.G. Ciarlet, C. Simader, V. Solonnikov, H. Sohr, R. Glowinski, and R. Rautmann. The generous support and patience of C. Byrne and M. Reizakis of Springer were also essential for the success of the project. The first version of the translation into English was prepared by G. Tronel of Université Paris VI. Additional modifications of the translation were carried out by A. Kufner in cooperation with O. John, V. Šverák, and G. Koch. LaTeX2e typesetting was finalized by E. Ritterová and O. Ulrych. As the editorial coordinator of the publication I would like to thank all those mentioned above and also many others who contributed to the final success of the task. In particular, the support of my mother and my sister was invaluable.

The content as well as form of the translated work keep strictly to the author's concept with no attempt to update or restructure it significantly. Such changes would have destroyed the unique historical value of the work. In addition, the huge progress that the theory of PDEs went through since the first edition of the book would require both considerable theoretical extensions and vast additional comments. We thus present Nečas's work essentially in the form in which it was published in 1967, because it is in some sense timeless in that it gives a definitive presentation of the

topics it addresses, still very relevant today. Quoting C. Simader, the book is as vital now as it was in 1967.

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