PREFACE
A SPECIAL ISSUE ON CONTROL, OPTIMIZATION AND NONSMOOTH ANALYSIS DEDICATED TO FRANCIS CLARKE ON THE OCCASION OF HIS 75TH BIRTHDAY

Francis H. Clarke (born 30 July 1948, in Montreal) is an outstanding Canadian-French mathematician. He graduated in 1969 from McGill University with a B.Sc. degree and in 1973 from the University of Washington with a Ph.D. thesis supervised by R. Tyrrell Rockafellar. In 1978, Clarke became a full Professor at the University of British Columbia and gave an invited lecture at the International Congress of Mathematicians in Helsinki. In 1984, he was appointed director of the Centre de Recherches Mathématiques (CRM) of the University of Montreal. During the nine years of his directorship, CRM became Canada's leading national research center for mathematics and its applications. The successes of Clarke's directorship included the creation of workshops and postdoctoral fellowships, thematic years, two series of publications, research awards, and an endowment fund. Francis Clarke is also the founding director of the Institut des Sciences Mathématiques (ISM) of Quebec. In 1995 Francis Clarke was appointed a full Professor at Claude Bernard University Lyon 1, where he was a member of the Institut Camille-Jordan. In 2000, he was appointed to a chair in mathematical theory of control at the Institut universitaire de France. In 2004, he chaired the selection committee for the first joint conference of the six mathematical societies of Canada and France.

Francis Clarke is known for his significant contributions to nonsmooth analysis, and particularly for his theory of generalized gradients, as well as for his work in optimization, differential equation, control theory, calculus of variations, and modeling in several application domains. His book Optimization and Nonsmooth Analysis has over 11600 citations.

In 1979 Francis Clarke became a Fellow of the Royal Society of Canada, in 1978-1980 got Killam Fellowship, Council of Canada, in 1980 received Coxeter-James Prize of Canadian Mathematical Society and in 1990 received Prix Urgel-Archambault of Association francophone pour le savoir. In 2000, he became a Senior Member of Institut universitaire de France (chair in Control Theory) and in 2015 received W. T. and Idalia Reid Prize, Society for Industrial and Applied Mathematics. He published 5 books and over 140 research papers and has 9 PhD students.

In this special issue, we present papers authored by a selected group of experts in the areas of optimal control, optimization and nonlinear analysis. Most of the papers collected here have been contributed by colleagues of Francis Clarke, who were influenced by his scientific work. The special issue contains eleven papers contributed by researchers from Canada, China, France, Hong Kong, Italy, Korea, Peru, Romania, Russia, Spain, Vietnam, and USA.

These papers cover a wide spectrum of important problems and topics of current research interest. Therefore we feel that this special issue will be highly important for many mathematicians, who are interested in recent developments in Optimization and Nonsmooth Analysis as well as in its numerous applications.

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