

MATHEMATISCHES FORSCHUNGSINSTITUT OBERWOLFACH

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Mini-Workshop: Lévy Processes and Related Topics in Modelling

Organised by

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ABSTRACT. The focus of the meeting was on recent ongoing research and new ideas in the area of infinite divisibility and Lévy processes, with particular view to realistic modelling. As regards more applied aspects, work in mathematical finance, especially concerning modelling and measurement of volatility, figured prominently.

Mathematics Subject Classification (2000): 60Exx, 60Fxx, 60Gxx, 60Kxx, 62Mxx.

Introduction by the Organisers

The theory of infinite divisibility, Lévy processes and Lévy bases and its applications is an area of very active current interest. This trend is of relatively new origin, dating back around 10 years. In this period larger research conferences on “Lévy Processes and their Applications” have been held on a regular basis, about every 2 years and at different locations around Europe. In addition intermingled between these conferences there has been a number of more specialized workshops within the area. One of these was organized at the Isaac Newton Institute, Cambridge, 2 1/2 years ago, the organizers being Professor Neil Shephard and Ole E. Barndorff-Nielsen, on invitation by the Newton Institute. The format of that workshop where the focus was on new ideas and ongoing research, rather than on finished work, and where the presentations were rather short, in some cases even down to about 15 minutes, was found to be very stimulating and productive. The same format was largely followed at the Mini-Workshop under reporting here and was found again to be very productive. Although the workshop was somewhat specialized a rather wide range of topics were treated in the presentations and in informal discussion groups.

Half of the participants were junior researchers, visiting the MFO for the first, or in some cases the second, time. Like the more senior people they were delighted by the warm atmosphere and excellent conditions for research provided by the Institute. And by lucky coincidence, due to the weather the traditional midweek afternoon excursion was shifted to the Thursday afternoon which was the first day of the Fastnacht celebrations in Oberwolfach with the parade of the “coffee aunts”. This made for a rather unique and refreshing break in the otherwise intense programme.

The first talk of the workshop, by Philip Protter, presented an overview of issues in mathematical finance. The talks by Fred Espen Benth, Jean Jacod, Thilo Meyer-Brandis, Mark Podolskij, Robert Stelzer, and Viktor Todorov discussed modelling and inference on volatility and jumps for financial dynamics. A variety of theoretical results on Lévy processes were presented in talks by Søren Asmussen, Friedrich Hubalek, Andreas Kyprianou, Alexander Lindner and Tina Marquardt, while other talks, by Makoto Maejima, Víctor Pérez-Abreu, Jan Rosiński and Steen Thorbjørnsen concerned work on new aspects of infinite divisibility. Finally, the talk by Anna Amirdjanova treated problems in the theory of Gaussian processes.

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