1. FOREWORD

On behalf of the Organizing Committee, we are very pleased to welcome you to the International Conference of Mathematical Sciences, ICMS, İstanbul, 2009 to be held in İstanbul (Turkey) from 4th to 10th August, 2009.

We hope that, ICMS 2009 will be one of the most beneficial scientific events, bringing together mathematicians from all over the world, and demonstrating the vital role that mathematics play in any field of science.

Welcome to our conference, Maltepe University, İstanbul!

Kemal Köymen
Chairman of the Organizing Committee

Hüseyin Çakalli
Vice-Chairman of the Organizing Committee
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Fatih Gündaylı Ayşem Çalışkuran
3. SESSIONS

The lectures in the following parallel sessions are to be held before and after keynote speakers lectures:

1. **Qualitative Theory of Differential Equations**, (Oscillation, Boundedness and Stability), Aydı̇n Tiryaki (İzmir University, Turkey) and Mehmet Ünal, (Bahçeşehir University, Turkey)

2. **Algebra**, Bedriye Melek Zeren and Temha Erkoç, (İstanbul University, Turkey)

3. **Geometry**, Bayram Şahin, (İnönü University, Turkey)

4. **Industrial Mathematics & Statistics**, Yuhlong Lio, (University of South Dakota, USA)

5. **Design Theory**, Hadi Kharaghani, (University of Lethbridge, Canada)

6. **Numerical Functional Analysis**, Allaberen Ashyralyev, (Fatih University, Turkey)

7. **Summability**, Ekrem Savaş, (İstanbul Commerce University, Turkey)

8. **The Metallic Means Family**, Vera W. de Spinadel, (University of Buenos Aires, Argentina)

9. **Optimization, Control and Neural Networks**, Alaeddin Malek, (Tarbiat Modares University, Iran)

10. **Scientific Computing and Numerical Analysis**, Sayed Hodjatollah Momeni-Masuleh, (Tarbiat Modares University, Iran)

11. **Fixed Point Theory**, Duran Türkoğlu, (Gazi University, Turkey)

12. **Topology and Abstract Analysis**, Jiling Cao, (Auckland University of Technology, New Zealand)


14. **Mathematics Education and Popularization of Mathematics**, Ahmet Şükrü Özdemir, (Marmara University, Turkey)

15. **Other** (none of the above but related to Mathematics), Hüseyin Çakallı, (Maltepe University, Turkey) and Ayşe Sönmez, (İstanbul University, Turkey)
4. ACKNOWLEDGMENTS

We thank firstly William Ruckle and then all the other scientific committee members who gave suggestion on making the conference better.

We also thank Belma T. Aksit who voluntarily agreed to be involved in the conference as a local logistic organizer two weeks before the first day of the conference and spent a lot of time to keep the conference alive.

There are many people who spent a lot of time and effort to make this conference possible. We would like to thank especially to the following young colleagues who had contributed to the success of this conference in various ways:

Özkan Değer, İstanbul University, Turkey
Ayşe Sönmez, İstanbul University, Turkey
İbrahim Çanak, Adnan Menderes University, Turkey.

To speak honestly, without Özkan Değer this abstract book would have been only a dream.
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8. ABOUT MALTEPE UNIVERSITY, İSTANBUL AND TURKEY
6. KEYNOTES

The abstracts of the keynote lectures are given in the following.
Options and Partial Differential Equations

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Abstract

The aim of this paper is to show how partial differential equations appear in financial models and to present briefly analytical and numerical methods used for effective computations of prices and hedging of options. In his thesis defended in 1900 in the Sorbonne, Louis Bachelier proposed a probabilistic modeling of the time evolution of the price of a share. In terms of what he calls the ‘radiation of probability’, he was able to relate the distribution of probability to the heat equation, which describes the evolution of temperature in a given media. In the first section, the reasoning of Louis Bachelier is used to bring out a relationship between the heat equation and a modeling of the evolution of share prices. In the second section, the equations satisfied by options prices are introduced. In the third section certain class of solutions to the Black, Scholes and Merton Equation are introduced.

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