

FOREWORD

This volume collects papers related to the conference **SPT2007**, where SPT stands for “*Symmetry and Perturbation Theory*” – albeit by now this traditional title is not exhaustive of the scope of this series of conferences.

Previous conferences on “Symmetry and Perturbation Theory” were held in Torino [1] (1996), Roma [2] (1998), and in Cala Gonone, on the eastern coast of Sardinia (2001 [3,4], 2002 [5] and 2004 [6,7]).

The success of the conference – at least in terms of the number of participants and proposed communications (as for the scientific success, we leave it to be judged by the reader of these proceedings) – pushed us to resort again to a mix of plenary and parallel sessions; the latter were organized by members of the Scientific Committee, which we warmly thank for this help – which in many cases actually meant going beyond their originally intended tasks and diving concrete help to the organization committee.

These parallel sessions were devoted to (and organized by):

- Geometry of Differential Equations (M.E. Fels),
- Symmetry of Differential Equations (P.J. Olver),
- Normal Forms Theory (T. Gramchev),
- Perturbation of ODEs (F. Verhulst),
- Perturbation of PDEs (M. Procesi),
- Integrable Systems – Analytic Aspects (A. Degasperis),
- Integrable Systems – Geometric Aspects (S. Rauch),
- N-Body Dynamics (S. Terracini).

The papers collected here should give some flavor of the many topics discussed, and results presented, at the conference. We were again taken by surprise by the large number of proposed contributions to these Proceedings; thus in order to stay within the planned length of this volume, we selected – again with the precious help of the Scientific Committee – some **featured contributions**, and unfortunately had to require other authors

to limit their contribution to **extended abstracts**. This subdivision does not reflect the subdivision into plenary and parallel sessions, and was actually to a large extent influenced by the strict time limits we set for the preparation of this volume, which forced several possible contributors to drop off the project.

We preferred, in line with the interdisciplinary nature of the whole SPT conference series and as in previous SPT conference volumes, to present all of the contributions together, i.e. without a separation in different topics; this, by the way and to our satisfaction, would have been rather arbitrary in many cases.

We would like to most warmly thank all of the authors (and referees) for accepting to work under extremely strict – and draconianly enforced – time limits: this is even more remarkable considering this took place at a rather full time of the year.

We hope the reader will enjoy the papers collected here and will find them useful to gather a picture of the recent progress in the fields our conference touched upon. If this is the case, the merit is of course not ours but of the authors.

References

1. D. Bambusi and G. Gaeta eds., *Symmetry and perturbation theory* (SPT96), Quaderni GNFM-CNR, Firenze 1997.
2. A. Degasperis and G. Gaeta eds., *Symmetry and perturbation theory – SPT98*, World Scientific, Singapore 1999.
3. D. Bambusi, M. Cadoni and G. Gaeta eds., *Symmetry and perturbation theory – SPT 2001*, World Scientific, Singapore 2001.
4. G. Gaeta ed., Special issue on “Symmetry and Perturbation Theory”, *Acta Applicandae Mathematicae* vol. **70** 1:3 (2002).
5. S. Abenda, G. Gaeta and S. Walcher eds., *Symmetry and perturbation theory – SPT 2002*, World Scientific, Singapore 2002.
6. G. Gaeta, B. Prinari, S. Rauch-Wojciechowski and S. Terracini eds., “Symmetry and Perturbation Theory – SPT 2004”, World Scientific, Singapore 2005.
7. G. Gaeta ed., Special issue on “Symmetry and Perturbation Theory”, *Acta Applicandae Mathematicae* vol. **87** 1:3 (2005).