

## PREFACE

The so-called Hanbury Brown - Twiss (HBT) effect, proposed in the mid-fifties, proved a powerful tool for estimating stellar dimensions. In 1960, its analogous counterpart was found in the microcosmos, the Goldhaber-Goldhaber-Lee-Pais (GGLP) effect, which measured the dimensions of the pion emitting regions in high-energy reactions. Both effects derive from statistical correlations among identical particles, which also led to the phenomenon being called identical-particle correlations or intensity interferometry. In the last few years, being largely applied in the realm of high energy collisions, this effect also acquired an alternative nomenclature, *femtoscopy*, due to two main reasons. First, it deals with source sizes of the order of one femtometer, and secondly because the method has been generalized to exploit correlations induced by Coulomb and strong interactions between the two outgoing particles. Currently, the term has also incorporated the special correlations involving squeezed states, theoretically shown to be possible, but remaining to be discovered by experiments at RHIC and LHC.

Femtoscopy is a dedicated field of research, which has been vastly developed in the BNL/AGS, CERN/SPS and RHIC era, not only experimentally but also with theoretical modeling and findings. This has created the need for a dedicated series of meetings, focusing on the discussion and deep understanding of femtoscopic phenomena. Within this spirit, the Workshop on Particle Correlations and Femtoscopy (WPCF) was conceived. It had its successful start in September 2005, in Kroměříž, Czech Republic, where Roy Glauber was present and chaired a session on squeezed states, days before he was awarded the 2005 Nobel Prize in Physics, which also contributed to making it a memorable meeting.

This second edition was held at the Instituto de Física Teórica-UNESP, in the city of São Paulo, Brazil, from September 9 to 11, 2006. It immediately followed the XXXVI International Symposium on Multi-particle Dynamics (ISMD 2006), held in the charming town of Paraty, in the state of Rio de Janeiro. The next meeting, WPCF 2007, will be held in Santa Rosa, California, in August 2007.

It was very special for us to be able to host WPCF 2006 in our small institute, in the heart of São Paulo. The attendance were nearly 30 enthusiastic people from all across the world. The workshop consisted of plenary talks covering interesting topics, as listed in the index. These sessions were efficiently organized by dedicated conveners, i.e., by P. Danielewicz & H. Eggers, A. Kisiel & R. Lednický, Gastão Krein, Y. Sinyukov & B. Tomášik, D. Miśkowiec & M. Šumbera, T. Csörgő & S. Pratt, M. Lisa & W. Metzger, and J. Alam & D. Peressouko, to whom we would like to express our deepest gratitude. They largely contributed to the success of the event. Additionally, we held three dedicated discussion sessions entitled: “Community Consensus Initiative”, organized by Scott Pratt and Mike Lisa. In our conversations prior to the WPCF 2006, Mike suggested that a white paper should be written at the end, summarizing what the participants of WPCF 2006 consensually considered to be the achievements of the field, as well as the principal challenges together with suggestions for ways to solve them. We are profoundly thankful to Mike for his countless fruitful interventions during the whole production period of this document. It is now brilliantly concluded and the documents opens this Proceedings. It is then followed by the manuscripts, covering 100% of the talks of the workshop, in the order that they were presented. We would like to emphasize that at the end of the workshop all participants enthusiastically endorsed the continuation of the series.

We were very fortunate to count on the opportune advice from the members of the International Advisory Committee, Masayuki Asakawa, Mark Baker, Andrzej Bialas, Tamás Csörgő, Hans Eggers, Barbara Erazmus, Roy Glauber, Miklos Gyulassy, Yojiro Hama, Tim Hallman, Thomas Humanic, Takeshi Kodama, John Cramer, Roy Lacey, Richard Lednický, Michael A. Lisa, Wes Metzger, Yuri Sinyukov, Michal Šumbera, Boris Tomášik, Yuanfang Wu, and William A. Zajc. To them, our sincere thankfulness.

We also thank our colleagues of the WPCF 2006 Organizing Committee, Gastão Krein, Otávio Socolowski, and Frédérique Grassi, for their help in the preparatory period, as well as Luciana M. Quiles for helping with the registration and abstracts. Special thanks are addressed to Tamás Csörgő for his valuable collaboration and effort in organizing the workshop. Without his firm initiative, we would hardly have brought the WPCF 2006 to São Paulo. In addition, we would like to express our gratefulness to the young language translator Rodrigo C. P. Novaes and to the secretaries Tereza Faracini and Marina Tokumaru, whose extremely valuable help and dedication were very much appreciated, being essential in the pre-workshop, as well as during the workshop days. We are also thankful to the Instituto de Física Teórica - UNESP, specially to its directors, for hosting our meeting so thoughtfully, and to Gerson Francisco, for making sure that it could take place within the institute premises. We also thank Nathan Berkovits for kindly opening the WPCF 2006, representing the Instituto de Física Teórica. Besides, initial suggestions by Renato Hama on the hardcover layout are gratefully acknowledged, as well as the final version designed by Celso R. Lourenço. We would also like to thank Neusa Martin for carefully putting the material of this proceedings in its final form. Furthermore, we are grateful to Prof. Silvio Salinas, head editor of the Brazilian Journal of Physics, for kindly supporting this special issue.

The memories of those intense and productive days are partially registered by several pictures, available (hopefully for quite some time yet) in the webpage of the WPCF 2006, at <http://www.ift.unesp.br/wpcf2006/index.htm>. The on-line version of this proceedings are available at <http://pcsbfl.sbfisica.org.br/bjp/> (Vol. 37, issue 3A).

Finally, we would like to thankfully acknowledge Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES - Proc. PAEX N. 0290/06-8) and Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP - Proc. N. 03313-6) for partially supporting the WPCF 2006, as well as the Brazilian Physics Society (SBF) for their skillful assistance during the organization of this meeting.

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Guest Editors