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Preface

The “Wigner 111 – Colourful & Deep Scientific Symposium” (held from 11-13 November, 2013, in the Main Building of the Hungarian Academy of Science, Budapest, Hungary) was organized on the occasion of Eugene P. Wigners 111th birthday, the 50th anniversary of his receiving the Nobel Prize in Physics “*for his contributions to the theory of the atomic nucleus and the elementary particles, particularly through the discovery and application of fundamental symmetry principles*”, and also to celebrate the recent foundation of the Wigner Research Centre for Physics of the Hungarian Academy of Sciences. The 20 plenary talks, 43 invited talks, and a poster session were primarily ment to cover the very broad spectrum of Eugene P. Wigners contribution to physics. Besides, the recent scientific activity of the Wigner RCP was also represented.

More than 300 participants attended the plenary and parallel lectures paying a tribute to Wigners scientific heritage and demonstrating his strong influence on todays research in several fields of physics. A silver coin with Wigners face, minted by the Hungarian National Bank and distributed among the participants, made the event even more memorable.

The scientific program included subjects like foundations of physics, Wigner functions, group theory, quantum optics, solid state physics, particle and nuclear physics, astrophysics, energetics, nuclear reactors. We may say that this series of talks, presented by leading experts, reflected the present state of art of modern physics in these sub-disciplines. After the symposium, on 14th November, in the frame of the Wigner Memorial Tour, a visit to Wigners birth-place, to his famous Budapest-Fasori Lutheran Secondary School and to the Wigner Research Centre for Physics was organized, including the pre-inauguration of the Wigner square at the front of the Wigner RCP, and a visit to the Wigner Datacenter.

The proceedings of this symposium contains contributions from the plenary talks (article numbers starting with 01 in the Chapter “Wigner’s Heritage”), and from seven subfields of reserach collected in individual Chapters (numbered starting with 02 through 07). For details see the “Contents” page. Although not all orally given talks were finally delivered in a written version, we, the Editors of this special collection are convinced that this proceedings of highly valuable contributions represent an interesting and timely review on contemporary research in the footprints of Wigner’s original investigations on quantum symmetries.

With this idea we present the following articles,

Péter Ádám, Gergely Gábor Barnaföldi, Tamás Sándor Biró, Péter Lévai and Sándor Varró.