

Speech in honour of Giulio Casati

Ladies and Gentlemen, Dear Colleagues, Dear Giulio, our meeting is dedicated to the 80th birthday of Professor Giulio Casati, so please allow me to say a few words about his life opus and his current work.

Professor Giulio Casati was born on 9 December 1942. He is Emeritus Professor of Theoretical Physics at Insubria University in Como, Italy, which he founded in 1998. He is famous for his fundamental work on chaos, both classical and quantum, being considered one of the pioneers of the latter. Casati is in fact principally known for the discovery of quantum dynamical localization phenomenon, that highlighted the relevance of chaos in quantum mechanics. His landmark paper, with Boris Chirikov, Joseph Ford and Felix Izrailev, is among the most quoted in the field. With Boris Chirikov, Italo Guarneri and Dima Shepelyansky Giulio Casati also discovered that quantum localization deeply affects the excitation of hydrogen atom in strong monochromatic fields. Further major contributions considered the connections between quantization of nonintegrable systems and the statistical theory of spectra. With the advent of quantum computing Casati and his coworkers studied the efficient quantum computing of complex dynamics. On the classical side, Casati's interests regarded mostly energy conduction in non-linear

lattices: from the earliest numerical proof of the validity of Fourier law in one-dimensional many body systems, obtained in collaboration with Bill Wisscher, Franco Vivaldi, and Joseph Ford, to the description of a thermal rectifier and of a thermal transistor.

Giulio Casati has received the Italian Prize for Physics "F. Somaini" (1991), the Enrico Fermi Prize (2008) (the most important Italian prize for Physics), the Premio internazionale per la fisica della Accademia Nazionale dei Lincei (2010), the Sigillo Longobardo (2010). He is a Member of the Academia Europaea based in London, and of the European Academy of Sciences and Arts based in Salzburg, Austria. He is the author/coauthor of over 300 publications.

Giulio Casati received his MS from the University of Milano in 1968, and from 1968 to 1971 was a doctoral and postdoctoral fellow at CCR Euratom Ispra (Italy) Centro comune di ricerca. In 1971-1972 he visited the Georgia Institute of Technology, Atlanta, Ga, as Research associate. He was then appointed Associate professor at Milan University 1973-1987, being appointed full professor of Theoretical Physics at Milan University in 1987. From 1993 to 1998 he also served as Dean of the Faculty of Sciences of Milan University. He then supervised the creation of a new university in Como, where he was Vice-Rector from 1998 to 2001. Since 2002 he has also been

on the faculty of the National University of Singapore. In 2014 he officially retired from the University of Insubria. Presently, he is also distinguished professor at the International Institute of Physics of the Federal University of Rio Grande do Norte, Brazil. Giulio Casati worked much to develop the scientific activities in his hometown of Como, where he founded the Centro di Cultura Scientifica Alessandro Volta, a world-renowned Conference Center. He is presently the scientific director of the Lake Como School of Advanced Studies. He also founded the Center for Nonlinear and Complex Systems at the University of Insubria, which he directed until 2014, when he was nominated honorary president.

Now comes his connection to Slovenia. Our meeting is dedicated to his 80th birthday. Over the many past years he intensively collaborates with colleagues **in** Slovenia, and **from** Slovenia, who were doing research at his institute, and thus has credit for the development of theoretical physics in Slovenia. Namely, he has strong collaborations with the group of Professor Tomaž Prosen since 26 years. This started in about 1996, just when Tomaž finished his PhD thesis with me at CAMTP, later he was collaborating also with Dr. Baowen Li, who was my postdoctoral coworker at CAMTP. In the year 2001 also Gregor Veble, after finishing his PhD degree with me at CAMTP joined his group in Como for about two years as

a postdoctoral coworker. Since these old times the collaborations between the Como and Ljubljana groups are very intense and fruitful. Recently, also Dr. Črt Lozej, my former PhD student, finishing in December 2020, now at the Max Planck Institute for the Physics of Complex Systems in Dresden, has been collaborating with Giulio as well as with the group of Professor Prosen. Last but not least, I must emphasize Giulio's important support for our international summer schools and conferences Let's Face Chaos through Nonlinear Dynamics which I have been organizing in Maribor since 1996 until 2014. He was one of the five Honorary Directors and also one of the major lecturers. Finally, he has invited us to act as directors of the recent Let's Face Complexity Summer School in Como, in September 2017, which was an important international event. Therefore, his contributions towards developing theoretical physics in Slovenia are important and highly appreciated.

Finally, Giulio Casati is the founder and the main organizer of the by now already traditional international conferences Dynamics Days Central Asia, which in the sense of an "intellectual silk road" connect far East Asia with Europe and all the countries in between. This fact underlines in a very impressive way his great international activities in organizing science, and connecting people, countries and continents. His contributions for the good

of our scientific community are admirable, especially as he has been supporting young researchers all over the world in an important way.

On this occasion I wish to thank you, Giulio, for all your immense and brilliant work in science and for science, for your continuous support, also on behalf of our institute CAMTP, on behalf of all participants of this Christmas Symposium, and on behalf of all Slovenian theoretical physicists, and wish you a very happy birthday and all the best for the many more years to come!

Marko Robnik

Maribor, banquet in the evening of 15 December 2022