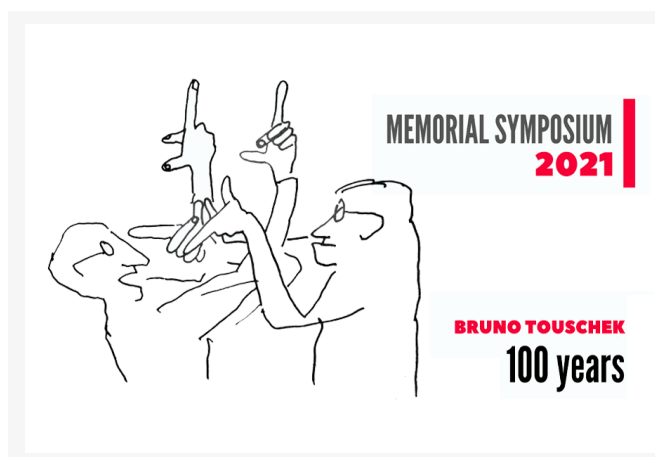


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THE PHYSICIST WHO LIVED TWICE: ON THE 100TH ANNIVERSARY OF HIS BIRTH, A SYMPOSIUM REMEMBERS BRUNO TOUSCHEK

1921-2021: on the hundredth anniversary of his birth, INFN, the Sapienza University of Rome and the Accademia Nazionale dei Lincei celebrated Bruno Touschek and his scientific legacy.

A brilliant Austrian physicist, thanks to his ingenious insights and fruitful initiative, Touschek wrote a decisive chapter in the history of physics, and particularly marked the history of particle accelerators, creating the first accumulation ring, AdA, at the INFN Frascati National Laboratories, forerunner of subsequent collision rings. The three Italian scientific institutions, which played an important role in Touschek's scientific life, therefore decided to commemorate him in the course of the Bruno Touschek Memorial Symposium, a three-day event that took place from 2 to 4 December at the Amaldi Lecture Theatre of the Sapienza University, the Touschek Lecture Theatre of the Frascati Laboratories and at the premises of the Lincei, going back over not only his history and his legacy but also everything that subsequently derived from his contribution. The event was attended by representatives and scientists from institutions and major European laboratories, including Nobel laureates Carlo Rubbia and Giorgio Parisi.

The scientific career of Bruno Touschek was profoundly marked by dramatic personal events. His most tragic experience dates back to 1945 when, while marching among the deportees, Touschek became separated from his column of comrades, falling into a ditch by the side of the road, exhausted by pneumonia and the long march. One of the soldiers escorting the prisoners shot at him: one shot in the head and one in the chest. Fortunately, Touschek was only grazed and rescued from a fate that seemed already sealed.

Touschek moved permanently to Italy, where his dear maternal aunt Adele, called Ada, lived, only in the 1950s. Here he taught at the University of Rome and made his decisive contribution to the implementation and evolution of high energy accelerators at the INFN Frascati National Laboratories. It was in 1961, in fact, that the first prototype of an accelerator developed from a revolutionary idea of Touschek came into operation: make two particle beams, one of matter and one of antimatter, circulate in the same ring and in opposite directions; from

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the collisions of the two beams new particles can be produced. In honour of his aunt, Touschek named the new machine AdA, which stands also for “Anello di Accumulazione” (Italian for Accumulation Ring). An accelerator that paved the way for the development of subsequent collision rings and is the basis of the operation of the Large Hadron Collider at CERN, the largest and most powerful collider in the world (where protons collide).

In Italy, thanks to his brilliant personality, Touschek contributed to the great development of the academic and scientific environment, forming a new generation of theorists - among his first undergraduates Nicola Cabibbo and Francesco Calogero - and consolidated what would become a characteristic of the Frascati National Laboratories: the symbiosis between theory, experimentation and construction of acceleration machines.

In the context of the symposium, on Friday 3 December, the ceremony of naming the visitor centre of the INFN Frascati National Laboratories after Touschek was also held. The ceremony was attended by his son, Francis Touschek. The symposium closed on 4 December, at the Accademia Nazionale dei Lincei, in Palazzo Corsini, with two sessions presented by Giovanni Gallavotti and Giovanni Jona-Lasinio and the concluding seminar by Luciano Maiani.

The symposium was held as part of the initiatives celebrating the 70th anniversary of the Italian National Institute for Nuclear Physics.■

[Link to the symposium page](#)