The birth of Elementary Particle Physics in Pisa

If we accept the claim (made by Luis Alvarez at the 1968 Nobel Prize ceremony) that Experimental Elementary Particle Physics was born in Rome in 1945, thanks to the famous Conversi-Pancini-Piccioni experiment on the "mesotron", then we might very well say that (in some sense) it was conceived in Pisa.
In order to qualify this statement, we must go back to the year 1930, when a very young Bruno Rossi (then assistant of Garbasso in Florence) had some conversation with Luigi Puccianti, then Professor of Experimental Physics of Pisa university since 1917.
Puccianti was a quite brilliant and very lazy physicist, who had almost given up writing papers after getting tenure as a Full Professor (which would put him in a very bad position in present-day universities), but had kept much attention on the evolution of physics, and had an extremely solid background in classical physics and especially electromagnetism.
Bruno Rossi had just started his research on cosmic rays, talking with Gilberto Bernardini (a slightly younger student of Puccianti who had just become an assistant in Florence) and later collaborating also with Beppo Occhialini and Daria Bocciarelli, all of them in Florence in those days.
One of the main problems for Rossi was the identification of the charge of the incoming "rays", in order to explore the possibility of heavy gamma rays, protons and high energy electrons (the only known particles in those days).
What Puccianti did was to give a crucial suggestion: why not building up some "magnetic lenses" (see figure) capable of focusing and/or expelling charged particles according to their charge and to the orientation of the magnetic field?
Rossi built up the lenses, never forgetting to acknowledge Puccianti's suggestion [in Phys. Rev. 36 (1930) 606 and again in Nature 128 (1931) 300].
More than a decade later, when Rossi was already in the U.S. and Bernardini was a Professor in Bologna, the notion of magnetic lenses had nevertheless become common sense among Italian experimental physicists involved in cosmic ray studies, and its application was crucial in the realization of the apparatus allowing Conversi, Pancini e Piccioni to perform their experiment and conclude that the "mesotron" (mu meson) could not be the particle (pion) conjectured by Yukawa in order to explain strong interactions.

Puccianti went "out of role" in 1947 and retired in 1950 (surviving only two more years). In the meantime, he had done nothing to convert the Pisa Institute to the "new physics" which was growing especially in Rome, where Fermi (another of Puccianti's students) had built up a school active in nuclear physics and later in cosmic ray research.
A temporary replacement of Puccianti was found in the person of Nello Carrara (one year older than Fermi and Rasetti and their putative "thesis advisor"). Carrara was a very smart experimenter, but he was involved in more "traditional" research: he studied X rays and microwaves (even inventing their name) and developed an independent project for the radar (rejected by the Italian army). During the three years of his direction in Pisa (1947-1950), the only progress in research came from Gozzini and his serendipitous laboratory (made up with leftover apparatus abandoned in Tombolo by the American occupation army)

The "official" birth of Experimental Elementary Particle Physics in Pisa must therefore be postdated to the year 1951, when (after a fruitless attempt to call Bruno Pontecorvo in 1949) the Direction of the Institute was offered to Marcello Conversi, who had just become Full Professor but could not remain in Rome where all positions were already taken. Conversi literally revolutionized the Institute, getting rid of some old and inactive assistants (Ciccone and De

Donatis) to make space for a new generation of collaborators, starting with Martelli and Murtas, and later Focardi.

Conversi's policy was crucial also in the opening of new top-level positions in the Institute, which allowed for the call of Giorgio Salvini (another experimentalist) in 1952 and of Luigi A. Radicati (a theoretician) in 1955. The presence of Salvini was coincident with the effective birth of INFN and of its Pisa (sub) section. Bernardini, then President of INFN, proposed to give to Salvini the direction of the group in charge of the project for the first Italian electrosychrotron (1953). The Accelerator Section of INFN, based in Pisa, worked hard until 1955, when it was moved to Frascati, the seat finally chosen for the new machine. As a side effect, the money raised by the local institutions in the perspective of a Pisan setting for the machine was destined to the construction of the first Italian computer, the CEP, following a suggestion given by Enrico Fermi during his last visit to Italy. But the birth of Computer Science in Pisa is another story, that has already been told many times.

In those years one of the most exciting developments came from Conversi's collaboration with Gozzini, who was certainly not a particle physicist but, in a sense, played a role similar to that of his master Puccianti, bringing in the discussions his experience (based on observations made with Battaglia in 1954) which led to the conception of a new kind of high-resolution particle detector, the so-called flash chamber. The results obtained by the group, that had come to include Focardi, Murtas and Franzinetti, were presented at the International Conference on Elementary Particles, held in Pisa on June 12-15, 1955, which consecrated the role of Pisa in the international scene of high energy physics research.
A natural evolution of the flash chamber would have been the spark chamber, discussed by the collaboration in 1957, but never realized in Pisa at that time, due to an erroneous estimate of technical difficulty and of costs.

The growth of elementary particle physics in Pisa was instead due also to another intriguing coincidence. The 1953 competition for students' positions at the Scuola Normale Superiore saw the following group of winners who later became physicists (in rigorous alphabetical order): Bruno Barsella, Giorgio Bellettini, Italo Mannelli, Luigi Ettore Picasso, Carlo Rubbia, Renato Santangelo and Giuseppe Silvestrini. As a trivial consequence of Conversi's charisma, many of them became (famous) high energy experimentalists, and some of them were crucial also for the further development of the Pisa Institute. The rest of the story can be told by the people who lived it, starting from Italo who is today the subject of all our attention and respect.