

1163-01-1268

**Sandro Caparrini\*** ([sandro.caparrini@polito.it](mailto:sandro.caparrini@polito.it)), via Tagliamento 6, 10040 Rivalta di Torino, Italy. *An abstract definition of the delta function from the 1830s.*

While today Giovanni Plana (1781-1864) has been forgotten except by specialists, in his time he was considered a leading international expert in theoretical astronomy and mathematical physics. He studied in Paris, at the prestigious Ecole Polytechnique, and during his entire life he remained in contact with the chief exponents of French science. For his achievements, in 1834 he was awarded the Copley Medal by the Royal Society. Late in life, he was given the title of 'Baron' for scientific services rendered to the Kingdom of Sardinia. The Plana Collection of manuscripts consists of more than 5.000 pages of mathematical manuscripts. They are essentially Plana's notebooks. Up to the late 1980s, these documents were stored away, unknown to scholars, in the vaults of the Turin Academy of Sciences. Written over a period of about half a century, from about 1810 to 1864, they reveal the inner workings of the mind of a representative scientist, and the influences that shaped his thought. The manuscripts contain a kind of generalized Fourier transform and an abstract definition of the Dirac delta function, invented by the physicist Paul Dirac in 1929. While, from the modern point of view, the mathematics is hopelessly muddled, this was no mean achievement in the 1830s. (Received September 15, 2020)