

Cunha's calculus in its times

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The title of this presentation is a direct reference to a 1987 paper by Ivor Grattan-Guinness, “Da Cunha's calculus in its time”, which summarizes José Anastácio da Cunha's particular version of the calculus and its context. I will expand on this subject, on one hand drawing on a couple of documents unknown in 1987 and on the other hand focusing on the large gap between Cunha's death in 1787 and the publication of a French translation of his main work in 1813 – several important developments in the foundations of the calculus occurred in the meantime (to the point of changing the standard educational version of the calculus), which would naturally affect mathematicians' perception of Cunha's calculus in the 1810s. One of the documents Grattan-Guinness did not know in 1987 shows an Italian reviewer in 1816 stating that Cunha had anticipated what was then the usual definition of differential – while Cunha would later be seen as a forerunner of the definition of differential given by Cauchy in the 1820s. This is an interesting example of how the same piece of mathematics may have different interpretations in different times.