

Abstract Submitted  
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**Ugo Fano, Enrico Fermi, and spectral line shapes** CHARLES W. CLARK, National Institute of Standards and Technology — Ugo Fano's 1961 paper on spectral line shapes<sup>1</sup> was recently ranked as the third highest in citation impact of all papers published in the entire Physical Review series.<sup>2</sup> In the course of preparing an article for a NIST Centennial volume,<sup>3</sup> I became interested in the history of the results presented in Fano's seminal paper, and will present my findings in this talk. An amusing sidelight concerns the role played by Enrico Fermi in the development of the famous "Fano profile" formula. I had been told this story by Fano when I was his graduate student, but uncertain of my recollection of the details, I did not publish it in his obituary.<sup>4</sup> I later learned that the archives of the Royal Society of London contain Fano's own written version of the tale, which will be presented in this talk. The story sheds light on the nature of Enrico Fermi's interactions with his students, and confirms accounts concerning the way in which he did his theoretical work.<sup>5</sup>

<sup>1</sup> U. Fano, "Effects of Configuration Interaction on Intensities and Phase Shifts," *Phys. Rev.* **124**, 1866-1878 (1961)

<sup>2</sup> S. Redner, physics/0407137 (2004)

<sup>3</sup> <http://nvl.nist.gov/pub/nistpubs/sp958-lide/116-119.pdf>

<sup>4</sup> C. W. Clark, *Nature* **410**, 164 (2001)

<sup>5</sup> F. Rasetti, in *Collected Papers, vol. I*, E. Fermi (University of Chicago Press, 1962), p. 178

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