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Italian Physicists and the Birth of Quantum Mechanics: From the Stark–Lo Surdo Effect (1913) to 1938

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The aim of this talk is to provide a historical reconstruction of the relationship between Italian physics and quantum mechanics during the period from 1913 to 1938.
This timeframe begins with the accidental discovery of a quantum effect on spectral lines by the then-unknown Italian physicist Antonino Lo Surdo—an effect discovered independently and simultaneously by Johannes Stark, later known as the Stark–Lo Surdo effect—and ends in 1938, a year marked by the partial dissolution of the Italian physics community due to both voluntary and forced departures.
This analysis draws on several key indicators. These include:
- the number of papers on "new physics" published in Il Nuovo Cimento, the official journal of the Italian Physical Society (SIF) and the most important Italian scientific periodical of the time;
- the participation of Italian physicists in international conferences (e.g., Solvay Conferences in 1911, 1913, 1921, 1924, 1927, and 1930);
- the organization of major international conferences in Italy by Italian physicists (e.g., the Como Conference in 1927, the Rome Conference in 1931, and the Bologna Conference in 1937);
- and the awarding of prizes by prestigious Italian academies.
The evidence shows that, between 1913 and 1938, Italian physicists were deeply engaged in the development of quantum mechanics. Through both individual efforts and collective initiatives, they progressed from being passive observers to becoming influential contributors to the field.

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