Kosmann-Schwarzbach, Yvette; **Chazottes, Jean-René**
Seven concepts attributed to Siméon-Denis Poisson. (Sept concepts attribués à Siméon-Denis Poisson.) (French) ｜ Zbl 07969945 ｜
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The French mathematician, geometer and physicist Siméon-Denis Poisson (1781–1840) touched on many branches of mathematics and physics in the course of his illustrious career as professor of mechanics at the Faculté des sciences de Paris and member of the Académie des Sciences, leaving behind him an immense body of work.

In this short outreach article aimed at the informed reader, mathematician Yvette Kosmann-Schwarzbach presents, describes and briefly analyses the contribution of this man of science to seven mathematical or physical concepts to which his name has remained attached, namely (1) Poisson's equation, in vector calculus, which owes its name to a contribution to the theory of electrostatics dating back to 1811–1813; (2) Poisson's ratio, in materials science and solid mechanics, which was introduced in a short article published in the Annales de chimie et de physique in 1827; (3) Poisson spot (also called Arago spot or Fresnel spot), in optics, which refers to a phenomenon so derisively called because it can be observed in an experiment suggested by Poisson that was intended to disprove a theory by Augustin Fresnel but instead corroborates it; (4) Poisson distribution, in probability theory and statistics; (5) Poisson summation formula in harmonic analysis; (6) Poisson kernel, in potential theory, and the integral formula derived from it in complex analysis; and (7) Poisson brackets in Hamiltonian mechanics.

As Poisson's name is thus associated with many concepts that were only fully developed after the death of the man whose memory they celebrate, the author succinctly recounts the broad outlines of these conceptual developments, working backwards from secondary sources to the seeds planted by Poisson himself in primary sources, while also giving a few brief indications of the evolution of terminology.

Reviewer: Frédéric Morneau-Guérin (Québec)

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