

1077-01-1816      **Jenny Boucard\*** ([jenny.boucard@gmail.com](mailto:jenny.boucard@gmail.com)). *Analogies between algebra and number theory:  
Some uses of congruences in France between 1801 and 1850.*

Gauss introduces the notion of congruence in 1801 in his *Disquisitiones Arithmeticae*. The classical historiography usually connects the history of the congruences to the development of algebraic number theory, built around a group of German scientists, with French mathematicians are mostly absent. Galois only stands out and is associated with another aspect of congruences, related to the algebraic theory of equations.

Other French authors, however, published texts on congruences in the first half of the 19th century, with different perspectives. Two of these mathematicians are Poincaré and Cauchy. Our goal is to present their arithmetical researches, and understand their contribution compared to the work of Jacobi, Dirichlet, Kummer, Galois, ... Poincaré develops a theory of order based in particular on the analogy between binomial equations and congruences : we will comment on his publications and their possible influence on the development of the history of number theory and algebra. Between 1829 and 1847 Cauchy publishes many articles based on the consideration of congruences and primitive roots: we'll see how his researches meet the work of Jacobi, Dirichlet, Kummer and Kronecker. (Received September 22, 2011)