1116-VG-1621 **Shigeru Masuda*** (hj9s-msd@asahi-net.or.jp), 2-18-5, Fuchu, 183-0002, Japan. *The Fluid Dynamics and the Heat Theory by Poisson.* Preliminary report.

We discuss historical development of classical fluid dynamics and heat theory from the viewpoint of mathematical history, in particular, of Poisson.

These situations owe to the arrival of continuum, on which we summarize the trailblazers of the trigonometric series such as Euler, Lagrange, Laplace, et al.,

Poisson issues the last work in 1835 in rivalry to Fourier and Navier, in which he discusses the essential theories for the expression between fluid motion and heat motion, emphasizing mathematical points such as complete integral in his three digressions.

Prévost's work on heat communication, which precedes Fourier, and whose initial scholar work and after it.

Sturm and Liouville refer Poisson's tools such as particular value and particular function, entire function, to solve the differential problems. Poincaré referring to many preceding works such as Laplace, Fourier, Dirichlet, Cauchy, except for Poisson, makes an offer of the modern guidance for mathematics not only on heat theory but also on pure mathematics.

Comparing these books and papers, we show the connection between the hydrodynamics, wave and heat dynamics, and the process of new mathematics putting forth in applied or physical mathematics. (Received September 20, 2015)