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*Henri Poincaré's Development of Hamilton-Jacobi Theory*

This presentation is based on joint research carried out by the presenter with Michiyo Nakane, Seijo University, Tokyo.

In his work in celestial mechanics Poincaré made fundamental use of what is known today as Hamilton-Jacobi theory. His knowledge of this subject was drawn from Carl Jacobi's writings as well as the work of such mathematical astronomers as Félix Tisserand. Poincaré's contributions appear in several of his publications beginning with his famous prize memoir on the three-body problem of 1890. The primary exposition is contained in his *Les méthodes nouvelles de la mécanique céleste* (1892-1899), particularly volume 3 of 1899. Poincaré's formulation of the theory influenced German quantum physicists in the early twentieth century, and also became part of standard literature in the calculus of variations. The present paper examines Poincaré's work, looking particularly at how he extended and reinterpreted key ideas from Jacobi.