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Lipkovski, Aleksandar, University of Belgrade, Yugoslavia

Rational curves with elliptic arcs - Serret's solution of Legendre's problem

In his memoir "On geometric representation of elliptic and ultra-elliptic functions" in Liouville's Journal in 1845, J. -A. Serret solved Legendre's problem to find curves whose arc length is expressed by elliptic integrals of the first kind, such as the lemniscate. He found all such rational curves. Serret's curves were rediscovered in 1995 and their properties studied by Solovyev and the author. With the help of G. Betsch (Tübingen), author analysed the original Serret's work.

Prasolov V., Solovyev Yu. : Elliptic Functions and Elliptic Integrals, Transl. AMS, vol. 170, 1997

Lipkovski A. : Serret's curves. Topology and applications, Moscow, Phasis, 1996, p. 191-192