

BIBLIOGRAPHY

M. FRÉCHET

1. *Une définition fonctionnelle des polynômes*, Nouvelles Annales de Mathématiques (4) vol. 9 (1909) pp. 145–162.
2. *Les polynômes abstraits*, Journal de Mathématiques vol. 8 (1929) pp. 71–92.

R. GATEAUX

1. *Sur diverses questions du calcul fonctionnel*, Bull. Soc. Math. France vol. 50 (1922) pp. 1–37.

A. MARCHAUD

1. *Sur les dérivées et sur les différences des fonctions de variables réelles*, Journal de Mathématiques vol. 6 (1927) pp. 337–425.

S. MAZUR AND W. ORLICZ

1. *Grundlegende Eigenschaften der polynomische Operationen*, Studia Mathematica vol. 5 (1934) pp. 58–68, 179–189.

A. D. MICHAL AND R. S. MARTIN

1. *Some expansions in vector space*, Journal de Mathématiques vol. 13 (1934) pp. 69–91.

G. VAN DER LIJN

1. *Les polynômes abstraits*, Bull. Sci. Math. vol. 64 (1940) pp. 55–80, 102–112, 163–196.

CALIFORNIA INSTITUTE OF TECHNOLOGY

ON THE QUADRIC OF LIE

SU-CHENG CHANG

The most important quadric attached to an ordinary point of a non-ruled and nondegenerate surface is, perhaps, the quadric of Lie. The characteristic curve of the quadric of Lie varying along an asymptotic curve of the surface decomposes into an asymptotic tangent and two edges of the quadrilateral of Demoulin.¹ In this note we propose to determine whether the characteristic curve of the quadric of Lie may decompose into two conics when the quadric of Lie varies along certain curves of the surface. The answer is positive.

Let (u, v) be the asymptotic net of a surface (M) and (M, M_1, M_2, M_3) its normal tetrahedron of Cartan, MM_1 , MM_2 being the two asymptotic tangents and MM_3 , M_1M_2 being the directrices of Wilczynski. Except for a projective transformation the surface (M) is determined by the system

Received by the editors June 8, 1942.

¹ A. Demoulin, *Sur la théorie des lignes asymptotiques*, C. R. Acad. Sci. Paris vol. 147 (1908) pp. 413–415, *Sur la quadrique de Lie*, *ibid.* pp. 493–496, *Sur quelques propriétés des surfaces courbes*, *ibid.* pp. 565–568.