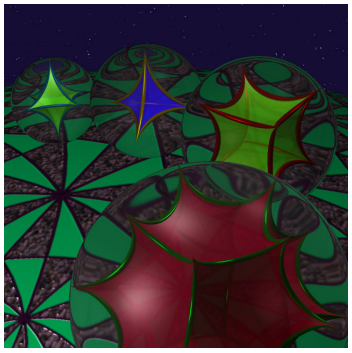
Oberseminar Geometrie
Department of Mathematics
University of Fribourg
Seminar room, Math II (Lonza)
Wednesday April 3, 2019, 10:20-12:00



Yohei Komori (Waseda University)

On the area formulas of inscribed polygons in classical geometry

In Euclidean geometry, Matsumoto et al. proved that there is no area formula of the general cyclic n-gon in terms of its side lengths by using only four arithmetic operations of addition, subtraction, multiplication and division and k-th roots, for n bigger than or equal to 5. This result recalls the Abel-Ruffini theorem that there is no formula of a solution of the general polynomial of degree n in terms of its coefficients, using only arithmetic operations and k-th roots, for n bigger than or equal to 5. In my talk I will show that the similar result also holds for other classical geometry, namely hyperbolic and spherical geometry. This is a joint work with Runa Umezawa and Takuro Yasui.