Contribution ID: **44** Type: **not specified**

# Frobenius k-characters, Fricke identities and Markov equation

*Tuesday, June 29, 2021 9:30 AM (40 minutes)*

In 1896 Frobenius and Fricke published two seemingly unrelated papers: Frobenius started to develop his theory of k-characters for finite groups motivated by Dedekind's question about factorisation of the group determinant, while Fricke followed Klein's approach to the uniformization theorem. I will explain that in fact these two works can be naturally linked and both are related to remarkable Markov's paper of 1880 on arithmetic of binary quadratic forms.

The central part of the talk is a brief review and extension of the theory of k-characters for finite groups initiated by Frobenius, who was motivated by the factorisation problem of the group determinant. We will mainly follow his very deep original work, which was further developed more recently by Johnson, Wiles, Taylor, Buchstaber and Rees.

The talk is based on joint work with V.M. Buchstaber.

Reference:

V.M. Buchstaber and A.P. Veselov Fricke identities, Frobenius $k$-characters and Markov equation. In: Integrability, Quantization and Geometry. II : Quantum Theory and Algebraic Geometry. Proc. Symp. Pure Math. 103.2 (2021), 67-78.

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