MATEMATISKA INSTITUTIONEN
STOCKHOLMS UNIVERSITET
Avd. Matematik

SJÄLVSTÄNDIGT ARBETE I MATEMATIK

Tisdagen den 5 juni kl. 13–14 presenterar Pinar Larsson sitt arbete "When Differential Equations meet Galois Theory" (30 högskolepoäng, avancerad nivå).

Handledare: Rikard Bögvad

Plats: Sal 21, hus 5, Kräftriket

Abstract:
Analogous to the classical Galois theory which provides an important link be- tween field extensions and subgroups of the symmetric group, differential Galois theory relates differential field extensions and subgroups of the general linear group. In this thesis we introduce differential extensions and construct the Picard-Vessiot extension field L for given base field K and a differential linear homogeneous equation. Furthermore we examine the connection between differ- ential K-automorphisms of L to GL(V), where V stands for the vector space of solutions of the given linear homogeneous differential equation over the field of constants of K, which in its turn is equal to the field of constants of L. Moreover we are examining the algebraic group structure of differential K-automorphisms of Picard-Vessiot extension fields. Also, Liouville and generalized Liouville ex- tensions are examined and their connections to the differential Galois groups are presented.
Alla intresserade är välkomna!