*Title*: Solvable and unsolvable equations

*Speaker*: Marius van der Put, University of Groningen, The Netherlands

*Abstract*: In Khovanskii's work solvability is an important issue. We recall some of his work on topological Galois theory. Then we develope solvability in the context of linear differential equations over a differential field like $\mathbb{C}(z)$.

The early history of this subject is due to Lazarus Fuchs (1883) and Gino Fano (1900). The theme was taken up by Michael F. Singer (1988).

A rather complete picture of the problem of solving a given linear differential equation in terms linear differential equations of lower order and algebraic extensions is presented in the work of the speaker and Khuong An Nguyen (2008-2010). We will survey this work after including a very short course on differential Galois theory.