Joël Nagloo: On the non-generic Second Painlevé equation..

In this talk we will look at the problem of existence of algebraic relations over $\mathbb{C}(t)$ between solutions of the second Painlevé equation $P_{II}(\alpha)$: $y'' = 2y3 + ty + \alpha$ for algebraic $\alpha \notin 1/2 + \mathbb{Z}$. In particular, I will discuss recent progress in showing that if $y_1, \ldots, y_n$ are distinct solutions, then $tr.deg\,(\mathbb{C}(t)(y_1, y_1', \ldots, y_n, y_n')/\mathbb{C}(t)) = 2n$, that is $y_1, y_1', \ldots,\ y_n, y_n'$ are algebraically independent over $\mathbb{C}(t)$.