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How to Conjecture and Prove that the Generating Function of the Yang- Zagier Numbers is Algebraic (in person)

Wednesday, December 1, 2021 2:50 PM (50 minutes)

In a recent paper Don Zagier mentions a mysterious integer sequence $(a_n)_{n\,0}$ which arises from a solution of a topological ODE discovered by Marco Bertola, Boris Dubrovin and Di Yang. In my talk I show how to conjecture, prove and even quantify that $(a_n)_{n\,0}$ actually admits an algebraic generating function which is therefore a very particular period. The methods are based on experimental mathematics and algorithmic ideas in differential Galois theory, which I will show in the interactive part of the talk. The presentation is based on joint work with A. Bostan and J.-A. Weil.

Presenter: YURKEVICH, Sergey (University of Vienna & INRIA)