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Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification: 11, 19, 33
Elbaz-Vincent, Philippe, U. Essen/U. Montpellier II
On Poly(ana)logs
This is joint work with H. Gangl. Cathelineau in [1] has introduced an infinitesimal version of the standard polylogarithms (and also of the Goncharov complexes) and has found interesting functional equations mostly for the infinitesimal 3-log. Our main motivation was to find functional equations for higher infinitesimal polylogs (and their structural properties), and to relate them to the usual polylogs. Notice that the infinitesimal version of the polylogs are considerably easier to handle. But, in an unpublished short note, Maxim Kontsevich [2] has introduced "a finite analog of the 1-log" which fulfills functional equations similar to the ones for the infinitesimal 2-log. So we tried to follow the analogy between finite and infinitesimal, to answer some questions asked in [1] and [2], and to find more evidence for a dictionary. Applications to number theory will be presented.
References: [1] Cathelineau, J. L. *Remarques sur les différentielles des polylogarithmes uniformes*, Ann. Inst. Fourier, Grenoble, **46**, 5(1996), 1347-1397. [2] Kontsevich, M. *The* $1\frac{1}{2}$*-logarithm* (unpublished note 1995).