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Motivic multiple zeta values and superstring amplitudes

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String corrections to open superstring tree level amplitudes take a striking and elegant form once the contributions from different classes of multiple zeta values are appropriately disentangled. This novel organization of the alpha prime expansion makes use of a Hopf algebra structure underlying the motivic version of multiple zeta values: It induces an isomorphism which casts the amplitudes into a very symmetric form and represents the generalization of the symbol of a transcendental function. Equipped with these open string results, we can better understand the decoupling of even and higher depth zeta values from closed superstring tree amplitudes.

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