An operadic view of Goncharov’s bialgebra of iterated integrals

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In this talk we will present a general construction of a bialgebra structure from a cooperad with a suitably compatible multiplication. This turns out to have many “classical” applications: for different choices of cooperad we can recover the bialgebras of Connes and Kreimer, and the bialgebra structure discovered by Baues on the cobar construction of a 1-reduced simplicial set. However the most important example for us in this talk will be Goncharov’s bialgebra of iterated integrals.

This is joint work in progress with Ralph Kaufmann (Purdue University) and Andy Tonks (London Metropolitan University).