1135-05-2719 **Adriano Garsia*** (`garsia@math.ucsd.edu`) and **G. Xin**. *Proof of the Functional Equation Conjecture.*

In a (2008) seminal paper T. Haglund, J. Morse and M. Zabrocki conjectured a Compositional extension of the Shuffle Conjecture. In 2015 E. Carlsson and A. Mellit proved this conjecture. What is not widely known is that in a 2013 thesis A. Hicks discovered that there is a quasi symmetric sharpening of the Compositional Shuffle Conjecture. More precisely, in the quasy-symmetric version, the combinatorial side is predicted to yield a polynomial in the variables x, q which satisfies a certain Functional Equation. In joint work, the presenter and G. Xin proved this latter conjecture. This talk gives the outline of this proof and describes how this result leads to a proof of a sharpening of the Compositional Shuffle Conjecture. (Received September 26, 2017)