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**Thomas Pfaff\*** (tpfaff@ithaca.edu). *Special Averages with Sums of Powers of Integers*. Preliminary report.

Let  $S(k, n)$  be the sum of the  $k$ th powers of the integers from 1 to  $n$ . We show that the equation  $(S(a, n) + S(b, n))/2 = (S(1, n))^c$  has exactly three solutions in  $a$ ,  $b$ , and  $c$ . We then consider an appropriate generalization with a partial solution. (Received September 15, 2005)