CENTRAL BINOMIAL SUMS, MULTIPLE CLAUSEN VALUES, AND ZETA VALUES

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Abstract. We find and prove relationships between Riemann zeta values and central binomial sums. We also investigate alternating binomial sums (also called Apéry sums). The study of nonalternating sums leads to an investigation of different types of sums which we call multiple Clausen values. The study of alternating sums leads to a tower of experimental results involving polylogarithms in the golden ratio.