
Sums of reciprocals modulo composite integers

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(Joint work with John B. Cosgrave.)

In 1938, as part of a wider study, Emma Lehmer derived a set of four related congruences for certain sums of reciprocals of positive integers over various ranges, modulo squares of odd primes. These were recently extended to congruences modulo squares of positive integers n , with certain restrictions on n . In this talk I will characterize those excluded n for which the congruences still hold, and find the correct reduced moduli in the cases in which the congruences do not hold.