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p-adic equations for power sums

For odd primes p and positive integers k, define $S_k = \sum_{r=1}^{p-1} r^{-k}$. Applying the p-adic logarithm to the identity $\prod_{r=1}^{p-1}(1-\frac{p}{r}) = 1$, we obtain $\sum_{k=1}^{\infty} p^k \frac{S_k}{k} = 0$, where the convergence is p-adic. (This means that the equation holds modulo p^m for arbitrarily large m.) In this talk I will give some other p-adic equations for the power sums S_k. For example, $\sum_{k=1}^{\infty} p^k (-1)^{k-1} B_{k-1} S_k = 0$, where B_n is the nth Bernoulli number.