"The Palindrome Conjecture: It's Probably Not True"

Abstract:
This conjecture involves reversing the order of the digits of a number in to ways. First, any number which is invariant under such an operation is called a palindrome (as is the case with reversing the order of the letters in words). Secondly, we define the operation called a versum to be the process of adding a number to the number resulting from reversing the order of the number's digits. Consider the sequence generated by performing a versum on a number, then a versum on the resulting number, then a versum on that result, etc. The conjecture states that the versum sequence generated by any positive integer contains a palindrome. The motivation for this conjecture is that any versum, which doesn't involve a carry, produces a palindrome, and one would expect that this condition would eventual arise far enough along in any such sequence. However, there are fairly well-known counter examples in all representations in which the base is a power of 2, i.e. base 2 (binary), base 4, base 8 (octal), base 16 (hexadecimal), base 32, etc. We will examine some properties of the versum and versum sequences with a view towards finding counter examples for representations in other bases, particularly base 10 (decimal). We will also examine some not so well-known counter examples in bases 4, 11, 17, 20, and 26, which have been discovered by David Seal.