

1154-05-184      **David Galvin\*** (dgalvin1@nd.edu), Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *Inverses and reciprocals of thinned exponential series.*

The compositional inverse of  $e^x - 1$  is  $\log(1 + x)$ , whose power series (about 0) is alternating. What about truncates of the power series of  $e^x - 1$ ? The power series of the compositional inverse of the polynomial  $\sum_{k=1}^r x^k/k!$  is alternating for some  $r$ , and not for others.

Somewhat surprisingly it seems easier to use a combinatorial (rather than an analytic) approach to pin down which  $r$  for which the inverse is alternating. The same combinatorial approach answers a 2006 question of Choi, Long, Ng and Smith, concerning the inverse of a matrix of certain restricted Stirling numbers.

In this talk I will attempt to make these vague statements more precise, and highlight some questions that remain in the area.

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