Generalised arnold numbers and series

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Abstract

After shortly recalling previous results about Arnold couples of integer numbers and Arnold series obtained using the Arnold-Avez matrix, we proceed to generalize these numbers and series using any arbitrary two dimensional matrix with elements integer numbers. It is found that the set of Arnold series is infinite. In particular, if some parameter to be found in the text has the values minus one or plus one, the well known Fibonacci, and Lucas series appear as particular cases of these generalized Arnold series. Further, these Fibonacci and Lucas series may display successive terms which are all positive, as in the usual series, or all negative, or alternating in algebraic signs.