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Representations of real numbers by infinite series, János Galambos, Lecture Notes in Math., vol. 502, Springer-Verlag, Berlin, Hiedelberg, New York, 1976, vi + 146 pp., $7.40.

During the last thirty years a large amount of research has been devoted to the study of various algorithms for the representation of real numbers by means of sequences of integers. In addition to the two "classical" algorithms, i.e. digit expansions and continued fractions, and to several types of additional, slightly less well-known ones like Cantor, Lüroth, Engel and Oppenheim series, more general classes of such algorithms have been defined and investigated, particularly by F. Schweiger [6] and also by the author himself [3].

The book under review introduces the reader to some of the most important features of these developments. The exposition is based on what the author calls an (α,γ)-expansion $y(x)$ of a real number x. For each j, two strictly decreasing sequences $\alpha_j(n)$ and $\gamma_j(n)$ of positive real numbers are given, satisfying the condition

$$\alpha_j(n-1) - \alpha_j(n) \leqslant \gamma_j(n) \qquad (n = 2,3,\ldots).$$

In order to define the algorithm for a given number $x \in (0,1]$, an auxiliary sequence $d_j(x)$ of integers is defined in such a way that the infinite series

$$y(x) = \alpha_1(d_1) + \gamma_1(d_1)\alpha_2(d_2) + \gamma_1(d_1)\gamma_1(d_2)\alpha_3(d_3) + \cdots$$

is always convergent and has, under fairly general assumptions, the limit x. A