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Noncomputability in analysis and physics: A complete determination of the class of non-computable linear operators. (English) [Zbl 0519.03045](#)

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For a scan of this review see the [web version](#).

MSC:

- 03F60 Constructive and recursive analysis
- 46B25 Classical Banach spaces in the general theory
- 35L05 Wave equation
- 03D80 Applications of computability and recursion theory

Cited in **2** Reviews
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Keywords:

computability theory; Lp-space; closed linear transformation; computable function of a real variable

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References:

- [1] Aberth, O, Computable analysis, (1980), McGraw-Hill New York · [Zbl 0461.03015](#)
- [2] Bishop, E, Foundations of constructive analysis, (1967), McGraw-Hill New York · [Zbl 0183.01503](#)
- [3] Brouwer, L.E.J, De onbetrouwbaarheid der logische principes, Tijdschrift voor wijsbegeerte, 2, 152-158, (1908)
- [4] Dunford, N; Schwartz, J.T, Linear operators, (1958), Interscience New York, Part I
- [5] Grzegorzcyk, A, Computable functionals, Fund. math., 42, 168-202, (1955) · [Zbl 0066.26001](#)
- [6] Grzegorzcyk, A, On the definitions of computable real continuous functions, Fund. math., 44, 61-71, (1957) · [Zbl 0079.24801](#)
- [7] Heyting, A, Intuitionism, an introduction, studies in logic and foundations of mathematics, (1966), North-Holland Amsterdam
- [8] Kreisel, G, A notion of mechanistic theory, Synthese, 29, 11-16, (1974) · [Zbl 0307.02028](#)
- [9] Lacombe, D; Lacombe, D; Lacombe, D, Extension de la notion de fonction réursive aux fonctions d'une ou plusieurs variables réelles, C.R. acad. sci. Paris, I, C.R. acad. sci. Paris, II, C.R. acad. sci. Paris, III, 241, 151-153, (1955) · [Zbl 0066.26101](#)
- [10] Moschovakis, Y.N, Notation systems and recursive ordered fields, Compositio math., 17, 40-71, (1965) · [Zbl 0143.01303](#)
- [11] Myhill, J, A recursive function defined on a compact interval and having a continuous derivative that is not recursive, Michigan math. J., 18, 97-98, (1971) · [Zbl 0218.02029](#)
- [12] Pour-El, M.B; Caldwell, J, On a simple definition of computable function of a real variable—with applications to functions of a complex variable, Z. math. logik grundlag. math., 21, 1-19, (1975) · [Zbl 0323.02049](#)
- [13] Pour-El, M.B; Richards, I, A computable ordinary differential equation which possesses no computable solution, Ann. of math. logic, 17, 61-90, (1979) · [Zbl 0424.68028](#)
- [14] Pour-El, M.B; Richards, I, The wave equation with computable initial data such that its unique solution is not computable, Adv. in math., 39, 215-239, (1981) · [Zbl 0465.35054](#)
- [15] {scM. B. Pour-El and I. Richards}, Computability and noncomputability in classical analysis, \textit{Trans. Amer. Math. Soc.}, in press.
- [16] Šanin, N.A, Constructive real numbers and constructive function spaces, (), No. 21 · [Zbl 0169.31101](#)
- [17] Shepherdson, J.C, On the definition of computable function of a real variable, Z. math. logik grundlag. math., 22, 391-402, (1976) · [Zbl 0359.02029](#)
- [18] Specker, E, ()
- [19] Zaslavskii, I.D, Some properties of constructive real numbers and constructive functions, Amer. math. soc. transl., 57, 2, 1-84, (1966) · [Zbl 0192.06002](#)
- [20] Zygmund, A, ()

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