Rozonoèr, L. I.
On interpretation of inconsistent theories. (English) ⟨Zbl 0677.03019⟩

The paraconsistent predicate calculus Cont, proposed by the author [Avtom. Telemekh. 1983, No.6, 113-124 (1983; Zbl 0532.03007); ibid. No.7, 908-914 (1983; Zbl 0532.03008)], is considered as a base for formal theories of first order. This calculus is as close as possible to the classical one, but the principle "everything follows from an inconsistency" is excluded. A three-valued semantics is proposed for theories based on Cont, and the basic metatheorems (of completeness, compactness, etc.) are proved. Relations of such theories to corresponding classical theories are established. In particular it is proved that a theory based on Cont is inconsistent iff a corresponding classical theory is inconsistent. The semantics of the equality in the frame of Cont is considered. It is proved that the pure predicate calculus Cont and Cont with equality are undecidable.

Reviewer: L.I.Rozonoehr

MSC:

03B60	Other nonclassical logic
03B20	Subsystems of classical logic (including intuitionistic logic)

Cited in **7** Documents

Keywords:

paraconsistent logic; inconsistent theories; paraconsistent predicate calculus; three-valued semantics

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References:

[1] Jaśkowski, S.; Jaśkowski, S., Rachunek zdań dla systemow dedukcyjnych sprzecznych, Studia soc. sci. turun. sect. A, Studia logica, 24, 2, 143-160, (1969), English transl.

[2] Arruda, A.I., A survey of paraconsistent logic, (), 1-41

[3] Bochwar, D.A., On the question of paradoxes in mathematical logic and the theory of sets (in Russian), Math. collect., 15, 57, 369-384, (1944) · Zbl 0060.02204

[4] Manin, Yu.I., Provable and unprovable, (1979), Sov. Radio Moscow, (in Russian) · Zbl 0403.03002

[5] Batens, D., Paraconsistent extensional propositional logics, Logique et anal., 23, 90-91, 127-139, (1980) · Zbl 0459.03013

[6] Rozonoer, L.I., On identification of inconsistencies in formal theories. I, Automat. remote control, 44, 6, (1983), part II · Zbl 0532.03007

[7] Rozonoer, L.I., Addition to the article "on identification of inconsistencies in formal theories. I", Automat. remote control, 46, 4, (1985), part II

[8] Rozonoer, L.I., On identification of inconsistencies in formal theories. II, Automat. remote control, 44, 7, (1983), part II · Zbl 0532.03008

[9] Mendelson, E., Introduction to mathematical logic, (1964), van Nostrand Princeton, N.J · Zbl 0192.01901

[10] Shoenfield, J.R., Mathematical logic, (1967), Addison-Wesley · Zbl 0155.01102

[11] Kleene, S.C., Introduction to metamathematics, (1952), van Nostrand New York · Zbl 0047.00703