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EXTENSION OF THE DENJOY INTEGRAL

Interesting generalizations of the descriptive definition for nonabsolutely
convergent integrals were given by several authors, for instance, Foran [2]
and G. Ene and V. Ene [1].
Recently K. Iseki has defined a series of new integrals descriptively([3]-
[9]) each of which extends the Denjoy integral in the wide sense. His
classes of primitives for the integrals are classes of continuous functions
containing strictly the ACG functions. Among them the concepts of power-
wise continuity ([4], p.12) and generalized sparse continuity ([9], p.94)
are important.
The purpose of the talk is to give a survey of the theories of the power-
wise integration and the sparse integration established by him.

REFERENCES

[1] G. Ene and V. Ene, Nonabsoluyely convergent integrals, Real analysis
exchange, 11(1985 - 1986), 121 - 133.
[2] J. Foran, An extension of the Denjoy integral, Proc. Amer. Math. Soc.
49(1975), 359 - 365.
[3] K. Iseki, An attempt to generalize the Denjoy integration, Nat. Sci.
Rep. Ochanomizu University, 34(1983), 19 - 33.
[4]   , On the powerwise integration, ibid., 35(1984), 1 - 46.

[5]   , On the powerwise integration in the wide sense, ibid.,36(1985),

15 - 39.

[6]   , On an integral called Dirichlet totalization, 36(1985), 115 -

130.

[7]   , On the incremental integration, ibid.,36(1985), 131 - 145.

[8]   , On the normal integration, ibid., 37(1986), 1 - 34.

[9]   , On the sparse integration, ibid., 37(1986), 91 - 99.