A NOTION OF ALMOST EVERYWHERE PRIMITIVE

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Various generalizations of the usual notions of derivative and integral are known,see [5], [8].For example,interesting generalizations of the descriptive definition for nonabsolutely convergent integrals were given in [9], [11], [12], [13], [14].

The classes of primitives for this integrals are,generally,of continuous functions [9], [11]. However,the classes of primitives for the integrals of Ellis [11] and the integrals of Lee [23] are not classes of continuous functions.

In order to be able to integrate "very discontinuous" functions,in this paper we introduce a notion of discontinuous but simmetricaly approximate continuous primitive,by replacing the usual derivative by the approximate derivative.

The starting point of this notion is an elementary problem of analysis [1].
The obtained entity,a discontinuous primitive,may be used to define a nonabsolute integral [2], which includes the Riemann, Lebesgue and Denjoy-Perron (generalized Riemann) integrals as particular cases, because the approximate derivatives possess all the known important properties of derivatives,see [7], and the simmetrically continuity assure the uniqueness of our integration.