

## CONVERGENCE PROPERTIES OF SOME APPROXIMATION PROCEDURES

Ioan Muntean

1. Introduction. The divergence phenomenon of some usual approximation procedures for real functions of a real variable, such as the development in Fourier trigonometric series, the Lagrange interpolation and the quadrature formulas, has been made evident ever since the past century and the first three decades of our century. The subsequent researches pointed out some dramatic aspects of this phenomenon: the almost everywhere divergence, the superdense divergence or the divergence on the whole definition interval of the singular functions for the considered procedure, and these singular functions constitute themselves superdense sets in the space of continuous functions. To attenuate the effect of this phenomenon some modification of approximation procedures have been advanced consisting in the formation of Cesàro or integral means.

Following the last ideas, in Sections 3 and 4 of this note we establish the convergence in measure of Fourier trigonometric series and of some types of Lagrange interpolation. The principle of the condensation of singularities is used in Section 5 to characterize those simple quadrature formulas which are unboundedly divergent on superdense sets in the space of continuous functions.