

## Approximation properties of Durrmeyer-sampling type operators in functional spaces

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Sampling-type operators have been introduced in order to give an approximate version of the celebrated classical sampling theorem. Here, we have studied the Durrmeyer-Sampling type operators (DSO) [3] (see also [6, 2]), which represent a further generalization of the well-known Generalized and Kantorovich-Sampling operators [1, 5].

The talk is devoted to show some recent approximation results for DSO in the multidimensional frame, based mainly on the study of a modular convergence theorem in the general setting of Orlicz spaces [4]. This result implies also the convergence in remarkable particular cases, such as in  $L^p$ -spaces, Zygmund spaces and exponential spaces. Including also the case of not necessarily continuous functions, the above results turn out to be particularly useful in the applications, where most of the real world signals (such as digital images) are not represented mathematically by continuous functions.

For the sake of completeness of the theory, we have also provided a pointwise and uniform convergence theorem and some quantitative estimates.

Finally, several examples for different types of kernels will be discussed.

## References

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