

## VITALI'S THEOREM WITHOUT UNIFORM BOUNDEDNESS

NGUYEN QUANG DIEU, PHUNG VAN MANH, PHAM HIEN BANG,  
AND LE THANH HUNG

*This work is dedicated to the 75th birthday of Professor Nguyen Van Khue*

**Abstract:** Let  $\{f_m\}_{m \geq 1}$  be a sequence of holomorphic functions defined on a bounded domain  $D \subset \mathbb{C}^n$  or a sequence of rational functions ( $1 \leq \deg r_m \leq m$ ) defined on  $\mathbb{C}^n$ . We are interested in finding sufficient conditions to ensure the convergence of  $\{f_m\}_{m \geq 1}$  on a large set provided the convergence holds pointwise on a not too small set. This type of result is inspired from a theorem of Vitali which gives a positive answer for uniformly bounded sequence.

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**Key words:** Rapid convergence, convergence in capacity, pluripolar set, relative capacity.