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PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH
Constantine 1 University – Frères Mentouri
FACULTY OF EXACT SCIENCES

ANNONCE DE SOUTENANCE



Conformément à la décision n° 120/ D3C/2026 du 08 Novembre 2026 autorisant la soutenance d'une thèse de doctorat, le Vice-doyennat chargé de la post-graduation, de la recherche scientifique et des relations extérieures, a n n o n c e la soutenance publique de :

THESE DE DOCTORAT DE

Manel El-Batoul MERAI

EN Mathématiques, EN Probabilités statistiques

Date : Mercredi 02 Décembre 2026 - Heure : 16h00

Lieu : Salle de conférences sise au C a m p u s Ahmed Hamani – Zerzara –
Département de Mathématiques

Sur le thème : « Theoretical aspects in nonparametric estimation ».

Devant le jury d'examen :

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Abstract

This thesis concentrates on recursive kernel techniques for nonparametric estimation and derives their asymptotic behavior within the framework of a-c. conve.. As a first stage, we characterize the estimation of the reg. function using both the classical kernel approach and the recursive kernel method for independent and identically distributed observations, and we develop their a-c. conve. together with the associated conve. rates. The inspection is subsequently broadened to the estimation of the con.distr. function and thus con.med through both kernel procedures.

For these est.s, the asymptotic properties are evaluated by deriving the corresponding rates of a-c. conve.. In the final stage, a simulation study is conducted. Graphical illustrations are provided to compare the recursive est.s with the true underlying curves as well as with the classical kernel est.s. In addition, numerical evaluations based on the empirical mean square error (EMSE) and the empirical mean absolute error (EMAE) are presented in order to assess the practical accuracy and effectiveness of the proposed methods.