الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي
جامعة قسنطينة 1 – الإخوة منتوري
كليـــــــــة العلوم الد قيـقة

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° 119/ 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

Mme BOULEZAZ C h a i m a

EN Mathématiques, EN Modélisation et Analyse numérique

Date : Jeudi 12 Novembre 2026 - Heure : 16h00
Lieu : Salle de conférences sise au C a m p u s C h a a b E r s s a s .

Sur le thème : « Chaotic dynamical systems and synchronization schemes».

Devant le jury d'examen :

	Nom et prénoms	Grade	Etablissement d'appartenance
P r é s i d e n t	MEDDOUR Lotfi	M.C.A	Université Constantine1, Frères Mentouri
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Abstract

This work aims to study the behavior of chaotic systems and to develop effective strategies for their control and synchronization. These systems are characterized by high sensitivity to initial conditions and complex dynamics, making their control a significant scientific challenge in numerous engineering and scientific applications. This study addresses the problem of designing efficient synchronization schemes for multiple chaotic systems while ensuring stability in fixed time. The focus is on developing advanced control methods capable of improving the performance of these systems. In this work, a novel synchronization scheme based on adaptive control is proposed, guaranteeing fixed-time stability for multiple chaotic systems. This work includes an in-depth theoretical study supported by mathematical proofs demonstrating the effectiveness of the proposed scheme, in addition to numerical simulations that show the efficiency of the proposed method compared to traditional approaches.

The results show that the proposed scheme achieves rapid and accurate synchronization between chaotic systems, with strong adaptability to changes in system parameters. It also ensures fixed-time stability regardless of initial conditions, representing a significant scientific contribution to the field of nonlinear systems control.