

African-European Early-Career Network for Mathematical Analysis and Related Fields



Meeting 12.07.26 17:00-19:00 CET

Program

Math Talk | 30 min

Sharp decay rate and asymptotic simplification for a quasilinear heat equation

By Maryam Al Hajjar, Université Polytechnique Hauts-de-France

Abstract: We study the decay rate for a quasilinear heat equation of the form $u_t - \Delta u = \operatorname{div} B(\nabla u)$. We consider the term $\operatorname{div} B(\nabla u)$ as a nonlinear perturbation of the ordinary heat equation and we will prove an optimal decay rate for the solution. More precisely, we show that the solution of the equation decays as $(1 + t)^{-d/4}$ under some usual conditions on the operator B .

Math Talk | 30 min

Tunisia From Its Boundary We Redraw Its Interior

By Chayma Nssibi, ENIT-LAMSIN, University of Tunis El Manar

Abstract: Tunisia From Its Boundary We Redraw Its Interior : reimagines Tunisia through the mathematical framework of the Calderón inverse problem, where the interior of an object is reconstructed using only information measured on its boundary. In this artwork, Tunisia's borders become more than geographical limits, they are carriers of memory, culture, history, and emotion. Inspired by the legend of Queen Dido and the mathematics of shape optimization, the work explores how geometry can express identity and how boundaries can reveal what lies within. Rather than depicting Tunisia through its interior, the artwork invites viewers to see its borders as the key to understanding the nation's essence. Tunisia is presented as a "perfect inverse problem," suggesting that its identity can be discovered by studying its boundaries with both mathematically and emotionally. This artwork was presented as part of the Heirs of Infinity exhibition at the Heidelberg Laureate Forum (HLF) 2025, Heidelberg, Germany. For more information, see: <https://demian-goos.de/isap-2025-artist-chayma-nssibi/>