



📍 ENS Paris-Saclay – Bâtiment Nord –
1S18

EQUIPE STAN

Faisal AMLANI

CHARGÉ DE RECHERCHE

Statut : Chercheur·se

☎ 01 81 87 50 83

🌐 Site internet (<http://www.faisalamlani.com>)

@ Courriel

in LinkedIn (<https://www.linkedin.com/in/faisalamlani/>)

📄 Voir son CV (<http://www.faisalamlani.com>)

CNRS faculty (*chargé de recherche* = tenure-track research fellow/assistant prof) since January 2022.

Research Interests

In short:

- Mathematical modeling & simulation for problems in solid dynamics, fluid dynamics, fluid-structure interactions

In full:

- › Novel high-order numerical methods/solvers for parabolic & hyperbolic partial differential equations
- › Mechanics-based linear/non-linear wave-like & diffusion-like phenomena
- › High-performance scientific computing
- › Mathematical physiology, computational hemodynamics
- › Computational seismology/geophysics (earthquakes, tsunamis)
- › Ultrasonic wave propagation for non-destructive testing
- › Physics-based AI for structural mechanics, cardiovascular analysis

Publications

2024

Conference papers

[Opérateurs pseudo-spectraux pour la différenciation numérique des EDP d'ordre élevé : applications à l'élastodynamique](#)

Faisal Amlani

16ème Colloque National en Calcul de Structures (CSMA 2024), May 2024, Giens (Var), France



2023

Journal articles

[Mechanistic insights on age-related changes in heart-aorta-brain hemodynamic coupling using a pulse wave model of the entire circulatory system](#)

Arian Aghilinejad, Faisal Amlani, Sohrab Mazandarani, Kevin King, Niema Pahlevan

AJP - Heart and Circulatory Physiology, 2023, 325 (5), pp.H1193-H1209. [\(10.1152/ajpheart.00314.2023\)](#)



[A Fourier-based methodology without numerical diffusion for conducting dye simulations and particle residence time calculations](#)

Faisal Amlani, Heng Wei, Niema Pahlevan

Journal of Computational Physics, 2023, pp.112472. [\(10.1016/j.jcp.2023.112472\)](#)

