Offre n°2025-09212

Development and application of a software platform for nanophotonics

Type de contrat : Fixed-term contract

Contrat renouvelable : Oui

Niveau de diplôme exigé : Graduate degree or equivalent

Fonction : Temporary scientific engineer

Niveau d'expérience souhaité : Recently graduated

A propos du centre ou de la direction fonctionnelle

The Inria centre at Université Côte d'Azur includes 42 research teams and 9 support services. The centre's staff (about 500 people) is made up of scientists of di?erent nationalities, engineers, technicians and administrative staff. The teams are mainly located on the university campuses of Sophia Antipolis and Nice as well as Montpellier, in close collaboration with research and higher education laboratories and establishments (Université Côte d'Azur, CNRS, INRAE, INSERM ...), but also with the regiona economic players.

With a presence in the fields of computational neuroscience and biology, data science and modeling, software engineering and certification, as well as collaborative robotics, the Inria Centre at Université Côte d'Azur is a major player in terms of scientific excellence through its results and collaborations at both European and international levels.

Contexte et atouts du poste

The position is with the Atlantis project-team at the Inria center of Université Côte d'Azur center, focusing on developing numerical modeling tools for nanophotonics. The team is also developing the DIOGENeS software suite for simulating nanoscale light-matter interactions [https://diogenes.inria.fr/].

Mission confiée

The main objective in this assignment is to participate in the develoment capabilities of the numerical tools developed in the DIOGENeS software suite.

The recruited engineer will also actively participate in the studies conducted by the Atlantis team members for demonstrating the benefits of these numerical tools through the simulation of realistic and challenging use cases pertaining to various applications of nanoscale light-matter interactions. In particular, the team is now actively collaborating with potential end-users of the DIOGENeS software suite who are raising various modeling issues that need to be addressed prior to simulating such realistic uses cases.

Principales activités

- Design and implement computational methods in object-oriented Fortran for partial differential equation models of nanophotonics
- Enhance the DIOGENeS software suite through new features, debugging, and performance optimization
- Collaborate with academic and industrial partners on research projects
- Represent the team at workshops, conferences, and dissemination events
- Develop and maintain technical documentation
- Contribute to scientific publications and technical reports

Compétences

Required qualifications:

- PhD or Master's in applied mathematics, scientific computing, computational wave physics, or photonics
- Strong programming expertise in C++ and/or Fortran for scientific computing
- Solid background in numerical analysis and finite element methods
- Familiarity with software engineering practices and version control (e.g., Git)
- Excellent command of English (spoken and written)

Preferred skills:

- Extensive experience in C++ or Fortran, particularly for high-performance scientific computing
- Proficiency in computational electromagnetics and Maxwell solvers
- Working knowledge of parallel computing (MPI, OpenMP, OpenACC, or CUDA)

Desired skills:

- Understanding of optimization algorithms
- Experience with reduced-order modeling techniques
- Exposure to deep learning and neural networks
- Proficiency in Python for scientific workflows

- Prior involvement in collaborative or interdisciplinary research projects

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Contribution to mutual insurance (subject to conditions)

Rémunération

From 2692 € gross monthly (according to degree and experience)

Informations générales

- **Thème/Domaine :** Numerical schemes and simulations
  Scientific computing (BAP E)
- **Ville :** Sophia Antipolis
- **Centre Inria :** Centre Inria d'Université Côte d'Azur
- **Date de prise de fonction souhaitée :** 2026-01-01
- **Durée de contrat :** 12 months
- **Date limite pour postuler :** 2026-06-30

Contacts

- **Équipe Inria :** ATLANTIS
- **Recruteur :**
  Lanteri Stéphane / Stephane.Lanteri@inria.fr

A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'e?orce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et

de l'économie.

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Sécurité défense :
Ce poste est susceptible d’être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L’autorisation d’accès à une zone est délivrée par le chef d’établissement, après avis ministériel favorable, tel que défini dans l’arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l’annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.