



Job offer
Royal Military Academy - Patrimony



PhD candidate (M/F/X) in Fluid Dynamics or Acoustics
Department of Mechanical Engineering
project "MILJETSOUND"
Publication: 02 May 2024

Job description and associated tasks

In the framework of a joint PhD between Université de Mons (Belgium)(UMons) and the Royal Military Academy, we are looking for a full-time PhD candidate with a master's degree in Applied Sciences / Engineering / Physics in the field of Fluid Dynamics or Acoustics.

Context:

The Royal Military Academy of Belgium (RMA) is a military institution of university education responsible for the basic academic, military and physical training of future officers, and for the continuing advanced training of officers during their active career in the Belgian Defense department (www.rma.ac.be). The Royal Military Academy is also conducting scientific research at university level for projects funded by the Belgian Defense department or external sources.

You work within the research cell on 'Fluid Dynamics' in the 'Environmental Mechanics & Mobility Applications' laboratory of the department of Mechanical Engineering. You conduct scientific research in a joint-PhD framework with UMons on a project entitled MILitary fighter JET SOUND (MILJETSOUND) within a research team.

Study

MILJETSOUND is a TRL-5 follow-on project. Current modelling of the propagation of high-intensity non-linear jet noise is not reliable. We intend to expand the in-house sound propagation solver to tackle novel modelling challenges and improve accuracy. The simulation tool will have to be validated against pertinent on-site experiments featuring real fighter-jets and an instrumented propagation path. This is a rather unique set-up. Better modelling of non-linear propagation yields better mitigation for the impact of military jet noise on personnel and communities..

The candidate will be jointly supervised by Lieutenant-colonel Professor Dr Benoît MARINUS & Lieutenant-colonel Dr Ir Kristof HARRI from the RMA, and Prof. Francis MOINY from UMons. The contract will be for 4 years, with possibility of extension.

Main Tasks

- Perform research activities in the experimental and numerical tracks of the project.
- Report the progress results to the promotor and research team in English.
- Report the obtained results at international conferences and write scientific archived papers in English.

Required skills

Technical skills

- The applicant shall have a Master's Degree in Engineering Sciences, Applied Sciences, or Physics in the field of Fluid dynamics or Acoustics. This requirement must be satisfied at the date of recruitment. Candidates with ongoing studies are encouraged to apply.
- Training or experience in Acoustics is an added value;
- Training or experience in Computational Fluid Dynamics is an added value;

- Training or experience in applied research and/or experimental techniques is an added value;
- Experience in programming is recommended.

Personal skills

- You conduct scientific research in an independent and upright way within a multidisciplinary environment that could lead you to a PhD.
- You think in an innovative and creative way.
- You communicate your results in a clear, concise and precise manner.
- You take initiatives.
- You are involved and results oriented.
- You are honest, loyal toward the institution and respect confidentiality.
- You plan and manage proactively your self-development, while being critical to your own functioning and striving to you self-improvement.
- You improve the team-spirit and solve interpersonal conflicts.
- You solve problems autonomously and find alternatives or solutions.
- You behave in a respectful way toward the others, their ideas and opinions as well as toward procedures and instructions.
- You are flexible for change and adapt yourself.
- You commit yourself in your job by giving the best of your aptitudes in striving toward the highest quality standards and persevere when needed.

Other skills

- The applicant shall have good knowledge of English (oral / written).
- Minimum knowledge of French or Dutch is an added value to facilitate collaboration with technical staff (CEFR level A2 or higher).

Specific requirement

- The researcher may be exposed to classified information and will therefore have to obtain the required security clearances. You will be working in a military environment. That is why everyone is expected to undergo a safety verification. The candidate must consent with the background checks required to obtain these clearances.
- Working for the Patrimony requires living in Belgium for the duration of the study.
- Due to limitations with the security clearance and confidentiality applications will be limited to those with a nationality of a country that is an EU member state or NATO member state.

Application

Send by email:

- your CV,
- the transcript of records of your last Master degree,
- if available your CEFR language level certificates,
- a scan of your ID card (both sides) or passport,
- and the filled out and signed request for security check. The form can be downloaded from: <http://www.rma.ac.be/nl/aanvraag-veiligheidsverificatie>

to Lieutenant-colonel Professor Benoit MARINUS (benoit.marinus@mil.be), and to Lieutenant-colonel Doctor Helena BRUYNINCKX (ERM-deao-rsw@mil.be).

Please mention clearly the reference of the project: **MILJETSOUND**

Application deadline: June 30, 2024 (18h00)

The interviews will take place at the Royal Military Academy, Hobbemastraat 8, 1000 Brussels or online upon request or due to access restrictions. The date, time, terms and conditions of the interview which is planned between July 2 and July 15, 2024, will be communicated to the preselected candidates.

Miscellaneous

Contract

- Probable date of recruitment: From September 1, 2024, in consultation with the applicant.
- Status: Full-time employment based on an open-ended contract with the Patrimony of the Royal Military Academy (you will not be a civil servant).
- Wage scale & Holiday pay: NA11 (holders of a Master Degree in Physics) / NA21 (Ir or holders of a recognized Master Degree in Engineering Sciences (Applied Sciences)).
- RMA-Patrimony applies a merit-based research career track, allowing researchers to advance in wage scale based upon annual evaluations.

Extra-legal benefits

- Possibility to benefit from a bilingualism allowance (Dutch/French) following a SELOR test;
- Holiday pay;
- End-of-year bonus;
- Free DKV hospitalization insurance. Possibility of additional affiliation for one or more persons living under the same roof: spouse, child(ren) (50% of the price per additional member);
- Bike allowance / Free public transport (home-work commute);
- Meal vouchers (6€ / day);
- Free access to campus sports facilities outside working hours;
- On-campus restaurant and cafeteria with democratic prices (discount on the daily menu);
- Flexible working hours within the 38-hour week;
- Teleworking possible with allowance ;
- Holidays:
 - 29 days holiday / year from the 1st year of contract (then from 45 years: +1 day holiday every 5 years)
 - + 1 week OFF every year between Christmas and New year's Eve (independent of the annual balance of holidays).
- Advantages and interesting offers thanks to the Benefits@work card (discounts, vouchers...);
- Entitlement to services offered by the 'Office Central d'Action Sociale et Culturelle de la Défense' (OCASC): among others holiday centres, discount on travel organised by the tour operator...;
- Possibility of benefiting from the nursery funded by Belgian Defence (subject to availability).

Work place

- Royal Military Academy, Avenue de la Renaissance 30, 1000 Brussels.
- Regular day excursions to measurement locations in Belgium.
- Occasional travels within Belgium and abroad for scientific conferences and contacts.

Points of contact

- Concerning the research project: Lieutenant-colonel Professor Benoit MARINUS benoit.marinus@mil.be
- Concerning the recruitment modalities: Lieutenant-colonel Dr Helena BRUYNINCKX erm-deao-rswo@mil.be
- For more information about the Royal Military Academy, see <http://www.rma.ac.be>