



**RECRUITMENT OF AN ASSISTANT RESEARCHER (TENURE TRACK)
IN MANAGEMENT SCIENCE
SPACIALITY : LOGISTICS - PRODUCTION**

Institution : MINES ParisTech (Ecole Nationale Supérieure des Mines de Paris)

Research Unit : Center for Management Science (CGS)

As part of the development of its research and teaching activities in the field of Management science, MINES ParisTech, member of PSL University, is opening an assistant researcher position in management sciences, specializing in the interconnection of logistics flows and services.

Open in the form of a fixed-term contract (initial duration of one year, renewable), this position is aimed at a junior researcher (M / F) with a taste for multidisciplinary work at the interface of fundamental research and the industrial world. The desired candidate will have the opportunity to work in close collaboration with the economic community and will participate in the contractual research work of his /her team. He /she will also have the possibility of defining a thesis subject from his /her first year in the Center. He /she will be called upon to co-supervise this thesis with an experienced member of the center, holding an habilitation to direct researches (i.e. HDR in French).

This position is intended to evolve into a permanent job as a teacher-researcher over a period of 3 years as part of a Tenure Track procedure. Candidates can find a description of this procedure on the MINES ParisTech website, at the address: <http://www.mines-paristech.fr/Ecole/Recrutement/Travailler-a-MINES-ParisTech/>

1. RESEARCH AT MINES ParisTech

MINES ParisTech is a public institution of a scientific, cultural and professional nature. It is under the supervision of the ministry in charge of industry. It is a founding member of the PSL University, MINES ParisTech. It develops a research activity covering a very wide field of scientific disciplines. It is composed of eighteen research centers that are organized into five departments: Earth and Environmental Sciences, Energetics and Processes, Mechanics and Materials, Mathematics and Systems, and finally Economy, Management and Society.

MINES ParisTech research aims at both academic excellence and socio-economic impact. This oriented research model is developed in close interaction with the socio-economic world: companies in the private or public sector, but also institutions and public administrations. MINES ParisTech is the leading school in France by its volume of research on contracts, carried by Armines, the MINES ParisTech Foundation or MINES ParisTech. This original positioning has enabled the School to expand its teams (by recruiting teachers-researchers on open-ended contracts with its own resources via the Armines contractual research association), and allows it to maintain over the long term unique experimental and digital platforms whose quality is recognized by its partners.

This ability of MINES ParisTech and companies to work together on ambitious scientific and industrial subjects is recognized nationally and internationally (e.g. the award of several CNRS medals to researchers from the centers, the renewal of the Carnot label in 2020, the obtaining of several industrial chairs and an EQUIPEX project, the establishment distinction in French and international ESR rankings, etc.).

2. CENTER FOR MANAGEMENT SCIENCE

The position is attached to the Center for Management Science (CGS) in Paris (<http://www.cgs.mines-paristech.fr>), whose staff consists of 13 permanent researchers, and 25 PhD students and postdocs.

The CGS is a member of the interdisciplinary institute of innovation (i3, UMR CNRS 9217). It is one of the reference laboratories in the field of management sciences. Its research hinges on a dual culture of modelling and empirical analysis of new forms of collective action. Faithful to a foundational tradition in management sciences, the CGS initiated many major scientific breakthroughs, mainly in design theory (C-K theory), logistics (the Physical Internet) and governance of innovative companies (purpose-driven corporations). These breakthroughs are currently ongoing in the context of several industrial teaching and research chairs, and numerous French, European and international partnership contracts and research projects. They lead to scientific publications recognized by several awards. For the school teaching courses ("Civil Engineering" cycle, co-accredited masters, and doctoral training), these breakthroughs allow the development of high-level teaching : the CGS is responsible for 3 Majors (options), a PSL M1/M2 master (i.e. the Management of innovation master), and several masters courses. It is involved in the Graduate Management Program and the Graduate "Ingénierie Sciences Appliquées Innovation" (ISAI). Moreover, the CGS is particularly strongly involved in the reform of the "Civil Engineering" cycle, in particular with the development of several new units of study (i.e. UE25, Proof Of Concept (POC) trimester, 3 research trimesters, etc.).

These actions allow the CGS to contribute to several contemporary socio-economic challenges, in particular health systems (reinventing a resilient health system), industry transformations (from factory 4.0 to the design factory), responsible innovation for transitions (sustainability, new energies, new mobility, digitization, new materials, etc.).

3. DESCRIPTION OF THE VACANCY

The candidate should have demonstrated its ability to develop academic work in Management Sciences. It is expected that he/she has a good autonomy that enables him/her to get involved in collective projects, to find external resources through partnerships with various actors in the industrial and academic worlds.

The center for Management Science (CGS) of MINES ParisTech - PSL aims at strengthening its competences in the Logistics theme by working on the Physical Internet paradigm. The Physical Internet developed by Eric Ballot and Benoît Montreuil (Georgia Tech University) is today a global reference for addressing issues of logistics efficiency and sustainability. Several studies and researches are conducted today to deal with this new and innovative concept (i.e. several articles have been published in high ranked journals, article in Science, book published in French, English, Japanese and Chinese (in progress), etc.). At the European level, Alice is a technological platform working on this paradigm, supported by 150 companies and financed by the European Commission. Alice is developing an ambitious roadmap for the design and implementation of the Physical Internet paradigm for the horizons of 2030 and 2040.

This new concept will challenge the way how logistics flows are managed and transported today and will require a radically different conception of the protocols and process managing the transport of logistics flows. This new organization of Logistics and transport leads to new formulations and original and promising results in several areas: sustainable transport, decentralized storage, robustness or resilience.

These models deeply question business organizations and their relationships when purchasing logistics services and question the new management of interactions between these organizations.

The CGS wishes to strengthen this research axis in three directions:

1. Investigate the mechanisms of interconnection of transport services and the associated decision models, in particular the behavior of actors using these mechanisms. Testing the performance of these mechanisms by modeling (i.e. simulation and serious games). Results are expected on the effectiveness of these mechanisms and their possible implementation through platforms.
2. The Physical Internet offers the possibility of routing flows due to a multitude of possible services between their origin and their destination. The algorithms in charge of performing this routing were studied very early on to demonstrate the potential of the Physical Internet. These now need to be developed in a more systematic way (to cover the different use cases) and in more depth to lead to operational proposals.

3. In order to test the performance of the routing algorithms, a reflection on typical benchmark cases should be conducted. This reflection could lead to a platform for testing routing algorithms in order to test their intrinsic performance (saturation of resources, service level, etc.) but also capacity for scaling up, neutrality or stability.

RESEARCH

The candidate will have to develop his/her own research program around these themes, participate in various courses intended for both students and engineers, supervise doctoral students, publish in the best international journals and conferences, and contribute to the development of the partnership research activities of the center. He /she will have to demonstrate his/ her ability to fit into the academic communities in which the Physical Internet Chair participates as well as into international research cooperation already underway.

A visiting period in a foreign research institution is planned.

The candidate will actively contribute to the animation and scientific organization of the "Physical Internet" chair and of the CGS. He /she will participate in particular in the deepening and diversification of existing partnerships with the socio-economic and academic worlds.

TEACHING ACTIVITIES

The candidate will be encouraged to set up and teach small classes or courses that will enrich the educational offer of MINES ParisTech.

The candidate will contribute to the various teaching and training of the "Tronc Commun" of his /her Department in the "Civil Engineer" cycle, namely the "Production and Logistics Systems" Major (option Système de Production et Logistique), and the courses for which the CGS is responsible (e.g. in particular the courses of "Production and Logistics Systems" as well as the courses of "Sustainable Logistics" trimester).

Moreover, he /she may be required to take responsibility for the new courses created by the center for the reform of the "Civil Engineer" cycle (e.g. in particular the trimesters "POC for a Responsible Industry" and "Sustainable Logistics"). He/ she may also intervene in other unit studies for "General Engineer" cycle. Moreover, he/ she will participate in the selection and graduation of students in the cycle where he/she will intervene. He /she will supervise doctoral students, engineering students, and master students.

The candidate will contribute, if necessary, to the School e-learning offer and /or to the replications of the School courses abroad, in French as well as in English. He/she will have to justify an educational experience in the field mentioned above. He/she will take on his/her share of the administrative work of organizing teaching and industrial visits.

Digital teaching experience is a plus.

CANDIDATE QUALIFICATIONS

The position is for a researcher graduated from a university or an engineering school and having a doctorate in management sciences with a marked taste for modeling in logistics and in particular for the interconnected logistics systems. The candidate should have a proven experience and a specialization in the research field described above. He /she must have demonstrated significant academic activity (e.g. scientific articles, communications in international conferences, etc.). Good modeling skills will be highly appreciated. Solid knowledge of the business world or engineering sciences are also useful for this research program.

The candidate must have demonstrated a good ability to work in a team, in order to be able to develop his research activities in collaboration with the CGS teams or other French and foreign research centers.

The candidate must have a solid teaching experience as well as supervision of student work. In addition, he /she must show his / her ability to carry out research work in close partnership with the socio-economic world while registering them in an international scientific community.

Fluency in spoken and written English is imperative.

4. APPLICATION FILE

The application file will include the following elements:

- a cover letter,
- a proposed scientific project, in conjunction with the work of the Scientific Management Center and the Physics Internet chair,

- a detailed CV,
- a list of works and publications,
- thesis and defense reports,
- if possible, three letters of recommendation which will be sent directly to the address below by personalities chosen by the candidate. Alternatively, the application file will include the names and contact details of at least three scientific personalities who may be requested to give an opinion on the candidate's work and abilities.

The file must be sent, before September 1st, 2021, to:

**Centre for Management Science – MINES ParisTech
60 boulevard Saint Michel,**

**To be addressed to the Director of the Center for Management Science Professor Blanche Segrestin
and/or by email blanche.segrestin@mines-paristech.fr**

Applications will be examined by a jury comprising both representatives of the School and external scientific personalities. The candidates selected during the preselection of applications will be invited to present their background, their work, and their scientific project to this jury.

For more information, candidates may contact the School's human resources department, and/or the Professor Blanche Segrestin (blanche.segrestin@mines-paristech.fr).