CNRS Tenure Track Position (CPJ) – 2025 – deadline July 14th, 2025

Sites concerned :

Aix Marseille Provence Méditerranée Lyon Saint-Étienne

Partner institutions/organisations

Aix Marseille Université
ENS de Lyon

Project title (French)

Dynamiques et décisions collectives

Project title (English)

Collective dynamics and decisions

Acronym:

DyDéCo

Keywords

Human and animal collective motion and behaviours
Emerging phenomena in social networks
Collective decision-making and collective intelligence
Fluctuations and extreme events in economic and financial markets
Social dynamics, crises and transitions

Target duration

5	*years*

ERC scientific themes

	Sciences du système Terre et de l'univers
	Environnement, agronomie, écologie
X	Physique
	Énergie
	Chimie et procédés
	Mathématiques
	Sciences et technologies de l'information et de la communication
	Biologie et santé
X	Sciences humaines et sociales
	Droit, économie, gestion

CNRS strategy

In its 2024-2028 Contract of Objectives, Resources and Performance, the CNRS has launched six cross-disciplinary challenges, one of which, entitled 'Societies in Transition', highlights the scientific issues raised by the transitions that our societies and the ecosystems in which they live are facing today: climatic, ecological, demographic, digital and epidemiological transitions, to name but a few. Deeply interdisciplinary research is needed to better understand the dynamics and collective decisions involved, and to be able to anticipate,

prevent or support these transitions.

In this context, the planned recruitment, jointly supported by CNRS Sciences Humaines & Sociales and CNRS Physique (CPJ CNRS DyDéCo), aims to attract talent to one of the four host laboratories, in order to strengthen the interface between questions from economics, sociology and geography, and those from statistical physics and non-linear physics. The challenge will be to develop new and original interdisciplinary approaches, thanks to access to and analysis of large quantities of data, dedicated experiments and surveys, and the ability of physical models to consider the diversity of interactions and spatio-temporal scales involved.

The topics that can most benefit from a scientific approach at the interface between physics and the humanities and social sciences include, but are not limited to: collective human dynamics, whether social (emergence of communities, collective choices, dynamics of opinion) or material (crowd movements, migrations) and their simplified models; social networks and the behaviour they are likely to influence, trade, distribution or communication networks; reactions and adaptations in the face of disasters; and collective decision-making and its links with public policy.

Host laboratories

AMSE - Aix-Marseille Sciences Économiques - UMR 7316 - RNSR:201220324U
CPT - Centre de Physique Théorique - UMR7332 - RNSR: 201220252R
EqCo - Equality and Conflicts - EMR5001 - RNSR:202424500F
LPENSL - Laboratoire de Physique de l'ENS de Lyon - UMR5672 - RNSR:199812078S

Scientific strategy of the host laboratory

Through her/his research, the person recruited will be responsible for creating or strengthening the interface between the social sciences and humanities and physics at the site of his or her host laboratory (Aix Marseille Provence Méditerranée or Lyon Saint-Etienne), whether this involves collaboration, co-supervision of trainees and students, scientific activities (co-organisation of seminars, study days and conferences) or dissemination and mediation activities.

Each of the host laboratories approached to host the CPJ has its own specific features and expertise, n which to base the research project: the UMR AMSE has developed a focus on the economic analysis of networks; the EMR EqCO uses satellite data to analyze conflicts linked to the exploitation of natural resources; and among their themes, the CPT and LPENSL are active in the physical analysis and modeling of various complex systems, particularly economic and social ones.

Summary of the scientific project

The project will focus on collective dynamics and decisions, in a context of global change and transitions. Its aim is to better understand, predict or control complex systems such as interaction or communication networks, urban structures and their evolution, economic or financial markets and their crises, crowds and their collective behaviour.

It will develop an interdisciplinary approach between physics and the humanities and social sciences, combining observational data, the results of behavioural experiments or surveys, and physical models using concepts from non-linear physics, disordered systems or active matter.It may concern collective dynamics, in normal situations or those requiring adaptation; social networks and the phenomena they influence; collective decision-making processes, collective intelligence and their links with public policy.

Summary of the teaching project

Teaching (28 hours of lectures or 42 hours of directed work) will be discussed according to the site where the successful candidate is assigned. He/she will be involved in existing courses at each site.

Funding

Nature and distribution of financial needs	Total in euros

ANR package	200 000
Co-funding	0
Total	**200 000**

International attractiveness

The Chairholder will be expected to implement actions and partnerships in the thematic field, and in particular to submit projects in response to European calls for proposals (ERC, Horizon Europe Consortium, etc.) over the 5 years of his/her contract. The CNRS's international policy aims to increase the impact and relevance of its research by promoting exchanges with teams of researchers from all over the world. In particular, interdisciplinary communities and networks covering the interface between human and social sciences and physical modeling exist at European or international level, which laboratories can draw on to attract the best candidates, and with which the person recruited on the DyDéCo CPJ can develop scientific exchanges and collaborations.

Dissemination

The dissemination of results will be achieved through world-class scientific advances, which can be characterized by all types of production: publications, software, patents, books, etc. In addition, the results will be communicated various targets such as scientific communities, the media, decision-makers, the general public, schoolchildren, etc., with an adapted timetable. Specific tools may be developed, such as websites, newsletters, meetings, international symposia, summer schools and conferences.

Open science

CNRS is developing a strong policy in favor of open science. Open science means making research results “as accessible as possible and as closed as necessary”. To this end, the CNRS aims to make 100% of the texts of publications resulting from the work of its units accessible to all, in particular through the HAL repository. The data produced must also be made available and reusable, except for specific restrictions. In addition, the guidelines for individual evaluation have been revised in line with the DORA declaration, to be more qualitative and to take into account all facets of the researcher's profession.

Science and society

The relationship between science and society is now recognized as a full dimension of scientific activity. The project will develop this dimension in synergy with all partners. The resulting research work will contribute to informing public decision-making. Participatory science initiatives may be initiated with actors of the socio-economic and cultural ecosystem of the project.

Indicators

The activity will be evaluated in particular on the basis of scientific output (publications, software, patents, books, etc.), on institutional and private partnerships formalized by contracts, on international presence, on the promotion of work to multidisciplinary scientific communities, on innovation and its transfer to society, and on scientific dissemination to non-specialist audiences.