

**Marie Curie Experienced researcher at University of Bologna,
within the ITN research project ManET.**

APPLICATION DETAILS

Protocol num. **582** dated **31.07.2015**

Art. 1 - Purpose

Applications are invited for the selection running at: DIPARTIMENTO DI MATEMATICA of the Alma Mater Studiorum University of Bologna for the award of a position of Experienced researcher (post doc) for the execution of research activities within the Marie Curie Initial Training Network (ITN) MANET Project: 'Metric Analysis for Emergent Technologies' according to the Annex I to the Grant Agreement n.607643 with the REA. The call for applications for the research fellowship issued pursuant to the University of Bologna Regulation issued by Rectoral Decree (D.R.) no. 416 of 19/04/2011, has been approved by the Dipartimento di Matematica on **Tuesday, July 21, 2015**. The selection will be compatible with the European Charter for Researchers and Code of Conduct for their Recruitment.

The activities shall be carried out under the supervision of **Prof. Bruno Franchi**, in a non-subordinate relationship with no set working hours.

The main place of work will be: DIPARTIMENTO DI MATEMATICA, and a secondment is envisaged to another partner of the MANET project to be defined at the beginning of the contract.

MANET is a Marie Curie Initial Training Network (ITN) devoted to the training of young researchers on new frontier of mathematics and its applications. It is a EU research project coordinated by the Universities of Bologna with partners Universities of Trento, Helsinki, Jyväskylä, Paris, Barcelona, Bern and Eindhoven. The objective is to face sophisticated problem of metric analysis in rich geometrical setting, with instruments of sub-riemannian analysis and geometric measure theory. These results will allow to study a large spectrum of technological problems from human vision to eye path tracking and robot design.

The proposed project, entitled: “**Intrinsic differential forms on CC groups and differential operators**”, targets the study of the Rumin’s complex of differential form in a Carnot group and, more generally, in sub-Riemannian structures, as well as that of differential operators within Rumin’s complex. In particular the project is focused on relationship between the properties of the exterior differential of Rumin’s complex and different notions of curvature for submanifolds of a Carnot group. A critical feature of the problem relies on the fact that the exterior differential of Rumin’s complex is an operator of higher order in the horizontal derivatives. The candidate should also address the study of Monge-Ampère type equations and, possibly, of Hessian equations in Carnot groups from the perspective of differential forms theory.

Art. 2 - Requirements for candidacy

To be eligible, each researcher must simultaneously fulfill the following criteria at the time of recruitment by the beneficiary.

- (a) Nationality: The researcher may be of any nationality.
- (b) Mobility: At the time of recruitment by the beneficiary, the researcher must not have resided or carried out his/her main activity (work, studies, etc...) in Italy for more than 12 months in the 3 years immediately prior to his/her recruitment under the project. Compulsory national service and/or short stays such as holidays are not taken into account.
- (c) Research Experience: at the time of recruitment the researcher
 - 1) should be in possession of a doctoral degree, independently of the time taken to acquire it, or has at least four years of full-time equivalent research experience and
 - 2) should have less than five years of full-time equivalent research experience.

In addition the candidates must possess the following admission requirements on the deadline for submission of applications laid down in this call.

The selection is not open to any persons who are related by blood or by marriage up to the fourth degree, to a professor working in the department or structure for which the call is issued, or to the Rector, Director General or a member of the Board of Governors of the University.

The selection is also not open to anyone who has held research fellowship contracts with any institution, pursuant to Italian Law no. 240/2010, for a period which, summed to the foreseen duration of this contract, exceeds a total of 6 years, excluding any period in which the contract coincided with a PhD without scholarship, for the maximum limit of the legal duration of the PhD programme.

Furthermore the selection is not open to anyone who has had research fellowship or fixed-term researcher contracts at the University of Bologna or any other state-funded, private-funded or distance-learning Italian university pursuant to articles 22 and 24 of Italian Law 240/2010, or with any other body listed in paragraph 1 of Art. 22 of Italian Law 240/2010 for a period which, summed to the foreseen duration of this contract, exceeds a total of 12 years, even if not consecutive. For the purposes of the duration of the above-described periods, in compliance with the laws in force any periods of maternity or sick leave shall not be calculated.

Art. 3 - Application

The application for selection, addressed to: DIRETTORE DIPARTIMENTO DI MATEMATICA, Piazza di Porta San Donato 5, 40126 BOLOGNA drawn up on unmarked paper (according to the annexed model **Model Application Form**), shall be **delivered no later than Monday, September 7, 2015 at 12:00 (Bologna Local Time)**. Any applications received beyond the deadline will not be accepted.

The application may be presented in person, sent by registered letter with advice of receipt or by courier, or by e-mail

- **Registered letter with advice of receipt or by courier:** The closed envelope must show the message “**Contains application for: Call for position for Experienced researcher in MANET project Intrinsic differential forms on CC groups and differential operators**”. Applications must be sent to the address indicated in the first paragraph of this article, and in this case the date of receipt is that given by the **stamp and date of the receipt** issued by the office to prove receipt

- **Hand Delivery:** Applications can be presented **in person** at: Office DIREZIONE or AMMINISTRAZIONE, DIPARTIMENTO DI MATEMATICA, Piazza di Porta San Donato 5, BOLOGNA, during the following opening hours: from Monday to Thursday, from 10:15 to 12:15 (please note that the Department will be closed from August 8 to August 24, 2015) In this case the date of receipt of the applications is that indicated in the receipt signed by the staff in charge of receiving the applications. The closed envelope must show the message “**Contains application for: Call for position for Experienced researcher in MANET project Intrinsic differential forms on CC groups and differential operators**”.

- **E-mail delivery:** The application can be sent at the following e-mail address: **mat.direzione@unibo.it**. In this case, all forms, certificates and other documents enclosed must be sent attaching them in **PDF format** to a **single** e-mail message, with a copy of a personal valid **identity document** with photo (passport or ID card), and indicating as **Object** of the message: “**Call for position for Experienced researcher in MANET project Intrinsic differential forms on CC groups and differential operators**”

The structure shall assume no liability for the non-delivery of correspondence which is not the result of errors made by its own staff.

In their application the candidates must, under their own responsibility, indicate:

- surname and name;
- date and place of birth;
- nationality;
- residence and chosen address for correspondence for the purposes of this selection;
- that they do not have a criminal record and are not involved in any current criminal proceedings (or if so, state which);
- not to be related by blood or by marriage up to the fourth degree, to any professor working in the department or structure for which the call is issued, nor with the Rector, Director General or a member of the Board of Governors of the University.
- that they possess the qualification of..... in, obtained from..... on (date)..... (indicate the qualifications required as stated in article 2 of the call for applications
- that they fulfill all the eligibility criteria listed above

The candidates in possession of a qualification obtained abroad must annex to their applications a translation into English of their foreign qualification, accompanied by a sworn statement that it is a faithful translation of the original certificate.

The foreign qualification may be declared admissible by the Evaluation Board, solely for the purposes of admission to the selection procedure.

In case of award, the winning candidates having obtained their qualification in a country outside of the European Union, the Structure can request in the same manner as laid down for the presentation of applications, **the official translation with a declaration of value of the foreign qualification** issued by the competent diplomatic representation or Italian consulate in their home country, in accordance with the applicable laws. If the documents are not received by the Structure with the modalities provided, the candidate will not be awarded the contract.

Candidates must enclose the following with their applications:

- sworn affidavit (annexed model: Dichiarazione Sostitutiva);
- scientific and professional curriculum vitae;
- list of publications;
- a 2 pages research proposal;
- a copy of a personal valid identity document with photo (passport or ID card);
- academic certificates (including grades and University courses);
- two letters of recommendation of professors or researchers of Italian or foreign Universities or research Institutions. These letters can also be sent separately. For any letter of recommendation not included with the application, the application must mention the name, permanent professional address and telephone number of the recommender. In this case, the letter must be sent directly by the recommender to the e-mail of the Department: **mat.direzione@unibo.it**, with the same deadline as the application, in PDF format and must contain a scanned signature of the sender;
- Any other document useful for the application.

Candidates with certified disabilities pursuant to art.3 of Italian Law no. 104 of 05.12.1992 may in their application request the benefits laid down in art.20 of the same Law, enclosing the original or an authenticated copy of the certification relative to the specific disability issued by the competent territorial medical board.

The signature on the application for selection **must not** be authenticated and is **obligatory** otherwise the application will not be accepted.

Candidates are admitted to the selection procedure with reserve. At any time, even after participation in any tests, the Administration may, with justification, exclude them from the selection procedure. The concerned candidate will be notified of such exclusion.

Art. 4 - Comparative assessment of the candidates and the Evaluation Board

The candidates will be assessed comparatively by an Evaluation Board designated by the competent Board. Selection committees will bring together diverse expertise and competences and will have an adequate gender balance, include members from different disciplines.

The selection procedure is based on selection criteria laid down in advance by the evaluation board. The evaluation of the candidates will be based on:

- their scientific skills and the relevance of their research experience with the research subjects of the proposed project described in Art n. 1;
- their ability to undertake the initial training activities;
- the expected impact of the proposed training on the researchers' career;
- an interview, aiming to verify the suitability of the candidate for carrying out the research programme.

For these purposes will be consider their scientific and professional CV, list of publications and their scientific production as documented by the submitted documents. The selection process will take into consideration the whole range of experience of the candidates. While focusing on their overall potential as researchers, their creativity and level of independence will also be considered.

The list of candidates admitted to interview will be published on the following notice board:

DIPARTIMENTO DI MATEMATICA , Piazza di Porta San Donato 5, city BOLOGNA, on **Wednesday, September 09, 2015**.

The list of candidates admitted to interview will also be published on the website: <http://www.matematica.unibo.it>.

The interview will take place on **Wednesday, September 16, 2015** at Room SEMINARIO I - DIPARTIMENTO DI MATEMATICA, Piazza di Porta San Donato 5 BOLOGNA, starting at 10:00 am (Bologna Local Time), according to a timetable that will be announced with the publication of the list of admitted applicants.

To be admitted for interview, the candidates must present a valid ID document.

Candidates, if the Evaluation Board agrees, may perform the interview via Skype. Candidates should ask for this in their application and provide their Skype Contact. They should also guarantee that the place where they will perform the interview is equipped with webcam, microphone and headset/speakers. Candidates admitted to the interview are invited to write to the Evaluating Board at the e-mail address: bruno.franchi@unibo.it.

During the on-line interview candidates must show a valid Identity Card or Passport. Online interviews will take place in the same day as the other interviews, following the schedule drawn up by the Board.

On-line interviews are public and can be followed by all other people staying in the room reserved for the interviews.

At the end of the selection procedure, the Board will draw up a list of candidates with relative scores - published on the Structure notice board and on the web-site: <http://www.matematica.unibo.it> - for a period of 12 months. If two candidates receive the same scores, preference will be given to the younger candidate.

The Head of the Structure shall confirm in writing his/her approval of the list drawn up by the Board.

The list of candidates may be used to award other research contracts within the same research project, also of a lesser duration than that indicated in the call for applications and in any case no less than one year.

For information contact: **bruno.franchi@unibo.it**; **mat.direzione@unibo.it**

Art. 5 - Duration and amount of the contract

The contract has a duration of **24 months**.

According to Grant Agreement with REA n.607643 and Resolution of University of Bologna CDA on date July 5, 2011, the **gross** amount of the research fellowship contract, includes all compulsory deductions under Italian legislation according to the Grant Agreement n. 607643, is the sum of:

- a yearly living allowance which is a flat rate set out in the contract of **62.361,00 euro par year** obtained as a product of a flat rate times a correction coefficient
- a monthly mobility allowance which is a flat rate of **1.066,00 euro par month for researcher with family charges; or 746,20 euro par month for researchers without family charges**, obtained as a product of a flat rate times the national correction coefficient.

The amount will be paid in deferred monthly payments.

The Research Fellow is provided with accident insurance, against payment of the required contribution which will be withheld from the first monthly instalment.

Art. 6 – Contract signature

The winning candidate will be invited to sign a research contract with the Structure **within November 1, 2015**.

The non-acceptance within the deadline notified by the structure shall lead to the forfeiture of the right to sign the contract.

Art. 7 - Rights and Duties

a) The contract is governed by the following regulations concerning leave: for obligatory maternity leave, the provisions laid down in the Decree of the Ministry of Labour and Social Welfare of 12 July 2007, published in the Official Journal no. 247 of 23 October 2007, and, for sick leave, article 1, paragraph 788, of Italian law no. 296 of 27 December 2006 and amendments.

b) The research activities are carried out under the supervision of the tutor, in a non-subordinate relationship with no fixed working hours. The research fellow shall personally carry out the required activities laid down in the Activity Programme without any substitution.

c) Research Fellows assigned to medical and clinical subject areas: the Research Fellow may carry out care activities exclusively for the purposes and needs of the research project, in the methods and limits laid down in the contract, or, in the case of activities carried out in healthcare structures, as laid down in specific agreements between the university and the health board.

d) At the end of the activities, the Research Fellow shall present a detailed final report to the Board of the structure, describing the activities carried out, the results achieved and the scientific developments, accompanied by the opinion of the tutor.

e) The Research Fellow may spend a period of study abroad, in line with a programme agreed with the department and with expenses borne by the department, without prejudice to the possibility to obtain specific funding.

Art. 8 - Regulations concerning Intellectual Property

Industrial Property rights over the results achieved by the Research Fellow in the execution of activities undertaken on behalf of the University, including but not limited to industrial inventions, models, drawings, plant varieties, as well as the intellectual and industrial property rights deriving from the production of software or databases (“Results”), belong exclusively to the University, which may freely use them also within agreements made by the departments with third parties, without prejudice to the moral rights of the Research Fellow who shall be acknowledged as the author or inventor.

The Research Fellow has the right to publish the Results of his/her research activities, provided that the publication does not prejudice the rights of the University over the protection of the Results.

The Research Fellow therefore undertakes to promptly notify the achievement of the results to the tutor, who shall verify the existence of any such prejudice.

In any case the Research Fellow undertakes to sign a specific Undertaking of Confidentiality with the referred Structure, which will be annexed to the contract.

Art. 9 - Non-accumulation, incompatibility, leave

1. The position of research fellow is incompatible with the following positions:

a) fixed-term and full-time staff employed by the bodies listed in art. 22 para. 1 of Italian Law no. 240/2010;

b) persons employed by any private bodies, on a fixed term, permanent or part-time basis; For staff of any Public Administration other than those listed in letter a) refer to the provisions of point 2 below;

c) persons with fixed-term research contracts with any university;

d) adjunct professors with official teaching responsibilities in degree programmes or specialisation schools in any university;

e) persons enrolled in any first, second or single cycle degree programmes,

PhD programmes with scholarships or specialisation school, or any professional master's degree programme or teacher training programme. Self-funded research contracts are compatible with enrolments in non-medical specialisation schools, for which no study grant or contract is foreseen, only where authorised in advance by the structure board, and having sought the opinion of the tutor.

f) persons awarded research fellowships at any other body.

2. Employees of public administrations other than those listed in point a) with a fixed-term, permanent or part-time contract shall take unpaid leave of absence for the whole period of the research contract.

3. Freelance professional activities are compatible with the research fellowship contract where authorised in advance by the Board of the structure, with the motivated opinion of the tutor and having verified that the activities in addition to the research fellowship do not prejudice the regular execution of the contract.

4. The accumulation of the research fellowship contract with study grants awarded for any purpose is not permitted, with the exception of those granted by national or foreign institutions for the purposes of integrating the research activities with study periods abroad.

5. The above requirements must be possessed from the moment of entry into force of the contract. The winning candidate shall sign a specific affidavit undertaking to notify the department of any variations in the declared situations as soon as they occur.

Art. 10 – Forfeiture

Any candidate who within the deadline notified by the structure does not sign the contract, unless for promptly and duly demonstrated reasons of health or force majeure, shall forfeit the right to sign the contract.

Art. 11 - Reference norms

For any matters not laid down in this call for applications, refer to the Regulation on Research Fellows issued by the University of Bologna by Rectoral Decree no. 416 dated 19.04.2011 and other statutory regulations in force.

The personal data provided by the candidates in their applications, pursuant to articles 7 and 13 of Italian Legislative Decree no. 196 of 30.06.03, shall be processed for the purposes of managing the selection procedure and the contract.

Selection procedure manager is Prof. Giovanni Dore.

This call for applications will be published on the University Portal, the MIUR website and the European Mobility Portal.

Bologna, Friday, July 31, 2015

HEAD OF DEPARTMENT
Prof. GIOVANNI DORE