JOB TITLE: Research fellow (art. 24 (3)(a), Law no. 240/2010)

APPLICATION SECTOR: 01/MATH-02 (ex A1/02)

ACADEMIC SECTOR: MATH-02/A Algebra (ex MAT/02)

POST STATUS: 3-Year Fixed-Term Contract, with possibility of extension of two years.

WORKPLACE: Department of Computer Science- University of Verona

CLOSING DATE: 27/06/2024 8PM (Italian time UTC+1)

APPLY HERE: https://pica.cineca.it/univr/2024rtda001/

> **N.B.:** the application must be signed digitally or by hand (if so, please print the pdf, sign it and upload it again)

SALARY: the fellowship's gross annual amount is € 34,898.06.

SCIENTIFIC PROJECT: LAVIE - Large views of small phenomena: decompositions, localizations and representation type (FIS 2021, CUP FIS00001706)

Abstract: This project is prompted by some open problems on the representation type of an algebra. The phenomena addressed by these problems concern small, i.e. finite length modules. But they are controlled by large modules which may have infinite length. We propose a novel approach that takes into account the interplay between small and large objects and is based on recent advances in silting theory and localization theory. The representation type of an algebra appears to be related with properties of decompositions and localizations of the module category and its derived category, notably torsion pairs, t-structures, and ring epimorphisms. We aim to uncover and solidify these connections. To this end, we plan to develop a theory of mutation at summands of cosilting objects and to investigate multiple interactions, e.g. with the geometric concept of stability, with a topological space originating in model theory called the Ziegler spectrum, and with Sylvester rank functions. This is complemented by concrete case studies aiming at classification results over specific classes of algebras. The research combines homological, categorical and combinatorial techniques with tools from mathematical logic and algebraic geometry.

RESEARCH AIMS AND TEACHING DUTIES:

Scientific objectives: research activity in representation theory of algebras, in particular on the topics of the project concerning stability theory and localization theory.

Teaching activities in algebra or geometry.

TEACHING DUTIES: the research fellow must devote 350 hours per year to teaching activities, including between 32 and 60 hours of lectures or exercise classes. The remaining hours should consist of supplementary activities such as seminars, exams, office hours, or supervision of students' projects, theses or PhD-theses.

SUBMITTED PUBLICATIONS: MAX 12

FOREIGN LANGUAGE: English

N.B.: All candidates must have an adequate knowledge of Italian.

PERSON REQUIREMENTS: have completed a PhD or equivalent qualification obtained in Italy or abroad.

In case of a doctorate obtained abroad:
By the start of the employment contract, the PhD certificate must be recognised as equivalent to an Italian doctorate by the competent Italian authority.

1. If your PhD has already been recognised as equivalent to an Italian doctorate with the so called *decreto di equipollenza*, please upload the decree. The *decreto di equipollenza* can be requested from an Italian university; please upload the request in the case that the process has been started at the time of application.

2. Alternatively, your PhD can be recognised as equivalent only for the purpose of applying for this position (*decreto di equivalenza*): to request the decree please send the form *Domanda di riconoscimento titolo estero*, posted on this webpage https://www.univr.it/en/job-vacancies/personale-docente/ricercatore/ricercatore-a-tempo-determinato-2024-junior-tipo-a to the Italian Ministry for Universities and Reasearch dginternazionalizzazione@pec.mur.gov.it . Please upload the request.

REQUIRED ATTACHMENTS FOR THE APPLICATION (pdf only):

1. valid ID;
2. a comprehensive signed curriculum vitae;
Candidates are advised to attach additional documents that provide evidence for the academic activities listed. By the start of the employment contract, an official Italian translation of these documents will be required (except for EU citizens or non-EU citizens residing in Italy).
3. the publications already printed at the date of the call of application's deadline, or those that have been accepted for print, along with the publisher acceptance letter;
4. (optional) reference letter(s) or any other document relevant for the evaluation.

THE SELECTION PROCESS

The selection method consists of a comparative evaluation based on the information supplied by candidates in their application (qualifications and publications) and an interview with the Evaluation committee.

The date and modalities (in-person or remotely via ZOOM) of the interview will be posted with a minimum of 15 days' notice on the Official University Register and on the University website at the following link: https://www.univr.it/en/job-vacancies/personale-docente/ricercatore/ricercatore-a-tempo-determinato-2024-junior-tipo-a

CONTACTS

UNIVR Teaching and Research Staff Recruitment Unit: *concorsi.docenti@ateneo.univr.it*

The official version (bando) is available at https://www.univr.it/en/job-vacancies/personale-docente/ricercatore/ricercatore-a-tempo-determinato-2024-junior-tipo-a This summary does not have legal value in itself. In case of discrepancies, the Italian call will prevail.