

**TENURE-TRACK FOR INSURANCE  
MATHEMATICS AND MATHEMATICAL  
MODELLING IN ECONOMICS**



**INFORMATION FOR APPLICANTS**

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## 1. General

The “Institute for Financial Mathematics and Applied Number Theory” is one of 10 mathematics departments at the Faculty of Engineering and Natural Sciences at the JKU Linz.

The institute’s main topics of research are: Financial Mathematics (particularly stochastic simulation in finance, the application of Monte Carlo and quasi-Monte Carlo-methods in finance, valuation of derivatives, software development for financial engineering, analysis of derivative trading strategies) and Applied Number Theory (particularly quasi-Monte Carlo-methods, number-theoretic methods in numerical analysis, complexity theory, theory of uniform distribution, discrepancy theory, number-theoretic algorithms, analytic number theory).

The Institute for Financial Mathematics and Applied Number Theory is also the center of the Austrian Science Fund Special Research Area (SFB) “Quasi-Monte Carlo-Methods: Theory and Applications” an Austrian research network conducting high-quality research in the field of Quasi-Monte Carlo-Methods.

## 2. Research

The successful candidate’s main field of research should focus on Insurance Mathematics and/or Financial Mathematics, or Mathematical Modelling in Economics.

The candidate is also expected to be willing to conduct joint research activities with other departments at the Faculty of Business, Social Sciences & Economics as part of the JKU’s main research areas “Transformation in Finance and Financial Institutions”. (See: <https://www.jku.at/en/research/research-at-the-jku/research-profile/> ).

The candidate’s application regarding his/her qualifications for the position will be considered under the following criteria:

- Research expertise in a topic in the fields of insurance mathematics, financial mathematics or mathematical modelling in economics
- High scientific/academic standing based on high-quality publications (include a list of publications, include 3 publications you consider most important), scientific/academic presentations (as an invited speaker), national and international cooperation efforts, reviewing and/or editorial work, organization of conferences, etc.
- International experience (research stays at and/or cooperation efforts with international universities and research institutions)
- Organization of and collaboration with research projects (please provide details)
- A detailed research concept if hired for this tenure track position

## 3. Teaching

The JKU is committed to research-led teaching. The candidate should be able to teach university-level courses in the fields of insurance mathematics, financial mathematics and mathematical modelling in economics and in the mathematical foundations in these fields (particularly stochastic processes and stochastic analysis) as well as courses about special topics related to his/her field of research but also,

to some extent, basic mathematics courses to students in other majors. The position requires teaching 4 academic semester hours per week.

The successful candidate will be asked to pursue cooperation efforts with international universities. Due to the program's international character, the successful candidate will be required to hold university-level classes, lectures and presentations in both German and English.

- The candidate's application regarding his/her qualifications for the position will be considered under the following criteria: The ability to hold required the full range of courses in the field of mathematical models in economics (including insurance and financial mathematics). Please provide a list of previously held university-level courses, including continual education courses in university didactics and activities.
- Experience supervising student theses, such as Bachelor's, Diploma/Master's degree theses and/or PhD dissertations. Please include a list of supervised theses and dissertations.

#### **4. Research Infrastructure**

As mentioned in the first section, the "Institute for Financial Mathematics and Applied Number Theory" is one of 10 mathematics departments at the Faculty of Engineering and Natural Sciences at the JKU Linz.

The "Institute for Financial Mathematics and Applied Number Theory" is also the center of the Austrian Science Fund Special Research Area (SFB) "Quasi-Monte Carlo-Methods: Theory and Applications" an Austrian research network conducting high-quality research in the field of Quasi-Monte Carlo methods.

In addition, the institute cooperates closely with the "Johann Radon Institute for Computational and Applied Mathematics (RICAM)" at the Austrian Academy of Sciences located at the JKU Linz.

Cooperation efforts with departments at the Faculty of Business, Social Sciences & Economics as part of the JKU's main research areas "Transformation in Finance and Financial Institutions" should be intensified (see: <https://www.jku.at/en/research/research-at-the-jku/research-profile/> ).

#### **5. Additional Requirements**

The institute aims to organize and establish joint projects and cooperation efforts with partners in the financial and insurance industries. The ideal candidate would possess expertise advantageous to attain the institute's objectives.

Applicants who possess little or no German language skills will be expected to acquire active, fluent language skills as quickly as possible and at a level that will enable the candidate to become a potential participant in university committee activities.

#### **6. Tenure (Qualification) Agreement**

This position for highly qualified junior researchers in the field of "Insurance Mathematics and Mathematical Modelling in Economics" will be initially limited to a six-year period. The successful candidate will be offered a tenure agreement providing his/her academic performance shows that the required higher qualifications can be attained. If the requirements of the agreement are met, employment will continue for an indefinite period as a tenured Associate Professor (in accordance with § 99 Sec 5

and 6 of the Austrian Universities Act). Potential promotion to a Full Professorship position is possible in a simplified appointment procedure (in accordance with § 99, Sec 4, Austrian Universities Act).

The qualification agreement has been designed to meet the following objectives:

- Provide the job holder with outstanding academic and scientific qualifications, proven by earning a post-doctorate/habilitation degree
- Provide the job holder with a high level of didactic qualifications;
- Provide the job holder with a high level of social skills, particularly the ability to work well as part of a team;
- Involvement in the institute's teaching and research activities to which the holder is assigned;
- Eligibility for a professorship position in accordance with § 98 2002 Austrian Universities Act