STATEMENT

On the competition for an academic position of Full Professor
In professional direction 4.5 Mathematics,
For the needs of Sofia University St. Climent Ohridski (SU),
Faculty of mathematics and informatics (FMI),
Announced in the State newspaper, number 21 of 13.03.2020,
and online on the website of FMI and SU

The present Statement has been prepared by Prof. DSci Ognyan Kounchev, IMI-BAS, as a member of a scientific jury, in the professional direction 4.5 Mathematics, scientific area Probability and Statistics, by a competition according to an Order number RD 38-267/10.07.2020 by the Rector of SU.

For participation in the competition, the only candidate who has submitted documents is Assoc. Prof. D.Sci. Mladen Svetoslavov Savov, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences.

I. General description of the materials presented

1. **Data about the application**

The documents submitted for the competition by the candidate comply with the requirements of ZRASRB, PPZRASRB and the Regulations on the terms and conditions for acquiring scientific degrees and holding academic positions at Sofia University "St. Kliment Ohridski " (PURPNSZADSU).

For participation in the competition, the applicant Assoc. Prof. Mladen Svetoslavov Savov presented a list of a total of 14 titles, which are publications in Bulgarian and foreign scientific publications and scientific forums. There are also 11 other documents (in the form of official notes and certificates from the employer, project manager, financing organization or project assignor, references and feedback, awards and other relevant evidence) supporting the candidate's achievements.

The documents are regular and correctly reflect both the scientific and teaching activities of the candidate and his employment in national and international research projects.

2. **Data about the applicant**

Assoc. Prof. Mladen Savov graduated in applied mathematics at FMI-Sofia University in 2004. with excellent success. In the period 2005-2008 he was a graduate student at the University of Manchester, where under the supervision of Prof. Ronald Doney he defended a dissertation on "Behavior of Levy's processes around zero." In 2017, Mladen Savov defended his dissertation at IMI-BAS on "Theory of Exponential Functionalities of Levy's Processes" for the degree of "Doctor of Science". In the period 2008-2009 the candidate specialized (post-doctoral student) under the guidance of Prof. Jean Bertoin at the University of Paris 6. During the period 2009-2012 Mladen Savov was a specialist (junior research associate) with a scholarship "Esmee Fairbairn" at New

College (at the University of Oxford), and between 2012-2014 was a lecturer in probability and statistics at the University of Reading, England. Since 2014, the candidate is an associate professor at IMI-BAS and a visiting scientist at the University of Reading, England.

Mladen Savov won and implemented a project under the Marie-Skłodowska Curie program (2015-2017) of the Horizon 2020 framework scheme of the EU. In 2015, the applicant also participated in the ACOMIN project at IICT-BAS, which is funded by the EU's FP7 program. Mladen Savov also participates in 2 national research projects.

Mladen Savov has been a member of the Scientific Council of IMI, BAS since 2016, and in 2020 was elected chairman of the Bulgarian Statistical Society. He has reported at the invitation of a number of international forums.

3. General characteristics of the scientific publications and achievements of the candidate

Mladen Savov works actively in the field of Levy processes and their applications and he has some additional results in probability theory. He has published 33 articles in his scientific career, all of which have an impact factor according to the Web of Science. Generally speaking, Mladen Savov's contributions can be grouped in the following areas – fluctuation theory of Levy processes; theory of exponential functionalities of Levy processes; anomalous diffusions and other constrained processes; spectral theory of non-selfadjoint Markov semigroups; some contributions to mathematical finance; Monte Carlo methods and probabilistic combinatorics. The candidate is active in all these areas, and there is an expansion of his research in other areas.

Mladen Savov presented for the competition 14 publications with impact factor, as according to the grouping in Q categories, they are 4 in Q1, 6 in Q2, 3 in Q3, 1 in Q4. Publications can be grouped into the following areas:

A. Classical properties of Levy processes [1,11,12,13];

B. Diffusions, anomalous diffusions and restricted stochastic processes [2,8,9,14];

C. Spectral theory of Markov semigroups and applications of the exponential functionals of Levy processes [5,8];

D. Some applications of branching and similar processes [3,10];

E. Contributions in financial mathematics and probabilistic combinatorics [4,6].

I appreciate the scientific work of Mladen Savov. The presented articles exceed the minimum national requirements (under Art. 2b, para. 2 and 3 of ZRASRB) and respectively the additional requirements of Sofia University "St. Kliment Ohridski "for holding the academic position of" professor "in the scientific field and professional field of the competition. For example, under columns C and D of Table 1 of RESOLUTION № 26 of the Council of Ministers of 13.02.2019 amending the Regulations for implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria, adopted by Decree съвет 202 of the Council of Ministers of 2010

(promulgated, SG, issue 75 of 2010; amended and supplemented, issue 19 of 2011, issue 9 of 2012, issue 62 of 2013, issue 60 from 2014, issue 57 of 2015 and issue 56 of 2018) for the scientific field of Mathematics 100 and 200 points are required, respectively, and the candidate has provided scientific publications, which carry respectively 516 and 315 points.

The scientific publications do not repeat those from previous procedures for acquiring a scientific title and academic position, and have not been submitted for registration at NACID. I have no doubts about plagiarism in the scientific papers submitted at the competition.

Mladen Savov presented 57 citations, which are reflected in the SCOPUS database, which brings 456 points with a required minimum number of 100 points. The applicant also fulfills all other point requirements in the above-mentioned documents.

4. Characteristics and evaluation of the teaching activity of the candidate

Mladen Savov has given numerous lectures and exercises both in foreign universities and in Bulgarian scientific and educational institutions. For example, in the field of probability theory, the candidate has taken both basic and specialized courses at the University of Reading in England. Mladen Savov has also taught 3 courses at FMI, namely, Probability Theory 2, Random Processes and Stochastic Processes 2. I believe that the candidate is able to lead basic and specialized courses in the field of probabilities, both in Bulgarian and English. Mladen Savov also has a successful doctoral student at the University of Reading in England.

5. Content analysis of the scientific and scientific-applied achievements of the candidate, contained in the materials for participation in the competition

The main contribution of the candidate in the above areas A-D is to obtain new, original results. The publications are in prestigious journals (which also have a significant impact factor), and I would pay special attention to the publications in the highly renowned in the field of Probability Theory journals Annals of Probability (2 publications), ANNALS DE L'INSTITUT HENRI POINCARE, PROBABILITES ET STATISTIQUES, and in the field of Mathematical Analysis SIAM J. on Math. Analysis. The publications attracted 57 citations in a short time. The candidate's contribution to the joint publications is equal to the other co-authors, which can be judged by the availability of the applied technique, which is within the competence of Mladen Savov.

I would like to pay special attention to the works [5,7], in which the methods of Spectral Analysis are applied to the study of Markov's random processes. I believe that they represent a very original contribution to the theory of random processes.

6. Critical remarks and recommendations

I don't have significant critical remarks and recommendations.

7. Personal impressions about the candidate

I know Mladen Savov since 2014, as a professor at IMI-BAN. According to me, he is one of the most brilliant young Bulgarian mathematicians in the area of Probability theory and statistics, who has mastered to perfection and applies modern methods of mathematical analysis in this field.

8. Conclusion on the application

After getting acquainted with the materials and scientific works presented in the competition and based on the analysis of their significance and the scientific and scientific-applied contributions contained in them, I confirm that the scientific achievements meet the requirements of ZRASRB, the Regulations for its application, and the relevant Regulations of Sofia University "St. Kliment Ohridski "for holding the academic position of" professor "in the scientific field and professional direction of the competition. In particular, the candidate satisfies the minimum national requirements in the professional field and no plagiarism has been established in the scientific papers submitted at the competition..

I give my positive evaluation of this application.

II. GENERAL CONCLUSION

Based on the above, I recommend the scientific jury to propose to the competent body for the selection of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski "to elect Mladen Savof to take the academic position of "Full Professor" in a professional field . **4.5 Mathematics.**

7.9.2020, Sofia   Statement prepared by: .Prof. D.Sci. Ognyan Kounchev