REVIEW

Of Materials Submitted for Participation in Contest
For Occupying Academic Position Full Professor
in Professional Field 4.5. Mathematics
(Probability and Statistics),
At Sofia University "St. Kliment Ohridski",
Faculty of Mathematics and Informatics
Candidate: Ass. Prof. Mladen Svetoslavov Savov, DSci
Reviewer: Prof. Nadezhda Kostadinova Ribarska, DSci
September 7th, 2020

Associate Professor Mladen Svetoslavov Savov, DSci is the only one candidate in the contest for occupying the academic position "full professor" in: scientific area 4. Natural Sciences, Mathematics and Informatics, professional field 4.5. Mathematics (Probability and Statistics) for the needs of Sofia University "St. Kliment Ohridski", Faculty of Mathematics and Informatics, announced in State Gazette no. 21 of 13 March 2020 and on the Internet sites of FMI and Sofia University "St. Kliment Ohridski". He is born on July 5, 1978. He graduated with honors in FMI of Sofia University "St. Kliment Ohridski" in 2004 and received a student award for excellence in mathematics "St.St. Cyril and Methodius". He defended his thesis on "Small time behavior of Lévy processes" in 2008 under the guidance of Prof. R. Doney at the University of Manchester, UK. He was awarded the "Doctoral Student of the Year" award at the Faculty of Engineering and Physical Sciences, University of Manchester for 2007. In 2008 and 2009 he held a post-doctoral position in collaboration with Prof. J. Bertoin, Paris. From 2009 to 2012, he held a position as Esmee Fairbairn Junior Research Fellow in Oxford. In 2011 he received the Scopus Award for Young Scientist in Mathematics. From 2012 to 2014 he is a lecturer in Probability and Statistics at the University of Reading, UK. In 2014 he became an associate professor at the Institute of Mathematics and Informatics of Bulgarian Academy of Sciences on Probability Theory and Mathematical Statistics, where he still works. Associate Professor Mladen Savov defended his dissertation on "Theory of exponential functionals of Lévy processes" and acquired the degree of "Doctor of Mathematical Sciences" in 2017.

Associate Professor Mladen Savov has submitted for participation in the contest a full set of documents and materials, which complies with the Regulations on the Academic Staff Development in the Republic of Bulgaria, the Regulations for their application and with the respective regulations for acquiring scientific degrees and holding academic positions of Sofia University

"St. Kliment Ohridski".

The research interests of Associate Professor Savov are in the field of probability theory, more precisely stochastic processes with a focus on Lévy processes, as well as some of their applications. Associate Professor Mladen Savov is a recognized authority in his field.

Associate Professor Savov has teaching experience as well. At the Universities of Manchester and Oxford he was tutoring students in various mathematical disciplines. The candidate has lectured on Probability Theory at the University of Reading in the period 2012-2014. At the same university during 2015-2019 Associate Professor Savov co-supervised with another colleague the PhD studies of Adam Barker, who successfully defended his thesis in 2019. Since 2017 the applicant has been a visiting lecturer at FMI of Sofia University. I know from my conversations with strong students that in his courses the level of teaching is very high and that Associate Professor Mladen Savov is a helpful teacher.

Associate Professor Savov has participated in prestigious international research projects. He won (and successfully completed in the period 2015-2017) an individual project MOCT on " Spectral Theory of Non-Selfadjoint Markov Processes with Applications in Self-Similarity, Branching Processes and Financial Mathematics", Marie Sklodowska-Curie Program, Horizon 2020. I have no doubt that this experience of the candidate can be very useful to FMI.

Associate Professor Mladen Savov submitted for the participation in the present contest for Full Professorship 14 papers in peer-reviewed scientific journals, of which 13 have already been published and one is accepted for publication. All articles are in journals with impact factor and impact rank (4 in Q1, 6 in Q2, 3 in Q3 and 1 in Q4). The scientific papers presented by the applicant have not been used in previous applications. I have no doubt that Assoc. Prof. Savov has contributed at least an equal share to all joint publications.

The scientific papers submitted for the competition satisfy the minimal requirements of the law (under Art. 2b, para. 2 and 3 of ZRASRB) and the additional requirements of Sofia University "St. Kliment Ohridski" for occupying the academic position "Full Professor" in the scientific area and the professional field of the competition. In fact, the minimal requirements are significantly exceeded.

The topics of the works submitted for the competition are extremely diverse, which is natural given the breadth of interests of the candidate and the long period of time during which they were published. A group of articles ([16], [116], [126], [136]) is devoted to some classical properties of Lévy processes. The complexity of the techniques used is impressive. Articles [56] and [76] are

related to the theory of non-self-adjoint Markov semigroups. Application of some results concerning the exponential functionals of Lévy processes obtained by the applicant is crucial. The works with numbers [8б] and [9б] investigate one-dimensional Brownian motion. I am not an expert in the field, but I have to mention that I was genuinely impressed by the article [9б]. Articles [2б] and [14б] (as well as both previous articles to some extent) are devoted to processes that generally describe the motion of particles in a trap medium. The importance of these models is the reason for the interest in the topic. The rest of the papers presented by the applicant are devoted to applications in numerical methods such as Monte Carlo ([3б]), population dynamics ([10б]), financial mathematics ([6б]) and probabilistic combinatorics ([4б]).

In total, Associate Professor Savov published 33 articles in peer-reviewed scientific journals, which altogether have over 235 citations. The rank of the journals and the rank and the quantity of the citations are impressive and imply that the works of the candidate are highly appreciated by the mathematical community.

I have no doubt that Associate Professor Savov has an equal contribution to all joint articles.

No plagiarism was found in the publications submitted for assessment.

CONCLUSION:

The scientific achievements of Associate Professor Mladen Savov, both in terms of quality and quantity, do not leave any doubt in the positive assessment of his research and pedagogical activity.

I strongly recommend the scientific jury to prepare a report-proposal to the esteemed Faculty Council of the Faculty of Mathematics and Informatics of Sofia University to elect Associate Professor Mladen Svetoslavov Savov for the academic position "Full Professor" of Sofia University "St. Kliment Ohridski" in Scientific Area 4. Natural sciences, Mathematics and Informatics, Professional field 4.5. Mathematics (Probability and Statistics).

07.09.2020

(Prof. N. Ribarska, DSci)