OPINION

On a competition for the occupation of the academic position
Associate Professor at the Faculty of Physics of Sofia University
in specialty 4.1 Physical Sciences (Gravity, Relativity Theory)
as announced in the State Gazette No. 65 of 16.8.2019

Candidate: Petya Georgieva Nedkova, PhD, Chief Assistant Professor, Faculty of Physics, Sofia University

Opinion prepared by:
Vladimir Krastev Dobrev, Dr.Sci., Professor, Associate Member of the Institute of Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences.

1. The candidate was born in 1981. She completed her higher education (Master Degree in Theoretical and Mathematical Physics) at the Faculty of Physics of Sofia University in 2008. She continued her studies as a PhD student in Theoretical and Mathematical Physics at the Faculty of Physics of Sofia University during 2009-2012 with Advisor Prof. Dr.Sci. Stoytcho Yazadzhiev. In 2012 she received her Dr. degree. Then in 2012-2013 she was post-doc at the University of Oldenburg, Germany. Since March 2013 she has been working at the Physical Faculty of Sofia University, first as Assistant Professor and since February 2014 as Chief Assistant Professor.

2. For the competition the candidate submitted 1 monograph and 20 publications, 15 of which are in journals with Impact Factor. Publications with IF are distributed as follows: Phys. Rev. D (IF = 4,368) – 10, Eur. Phys. J. C (IF = 4.843) -2, Nucl. Phys. B (IF = 3.185) - 1, J. Cosm. Astroparticle Phys. (IF = 5.524) - 1, Phys. Lett. B (IF = 4.162) - 1. The total impact factor of her publications is 66,237. The candidate is the leading (corresponding) author in 12 of the publications with IF and in 3 of the others. She has 5 other publications (2 with IF) that have not been submitted for the competition.
Her publications have 157 citations and her h-factor is 6.
She has talks at 12 international conferences, 4 of which are at the prestigious Marcel Grossmann Conferences.
She leads a project from a 2017 session for young scientists with the Bulgarian NSF and a project funded by Sofia University in 2019.
The applicant has a teaching experience equivalent to 7 years of full-time university workload (according to the official reference).
She has supervised 2 successful undergraduate students, one of them in Germany.

In conclusion: the candidate fully fulfills the normative criteria of the Faculty of Physics of Sofia University for the academic position of Associate Professor.

3. General characteristics of the scientific activity: The activity of the candidate is scientific research. The scientific field consists of modern areas of theoretical and mathematical physics, mainly gravity and relativity, which fulfils the specification of the competition.

4. The applicant's main scientific contributions are:
— Construction and study of new explicit solutions of (generalized) space-time gravity field equations possibly in higher dimensions or describing black holes.
--- Investigation of compact objects, including black holes, space-time tunnels, bare singularities, gravitational instantons, also of their thermodynamic properties.
--- Classification of solutions describing space-time tunnels (" wormholes ") within Einstein-Maxwell-dilaton gravity.

5. General characteristics of the contributions: All scientific contributions can be classified as obtaining and proving new facts. The results definitely enrich the existing knowledge, solve important scientific problems, correspond to modern developments, and make original contributions to science.

6. Critical notes - none.

7. Conclusion: In my opinion, the candidate fully fulfills the requirements for the academic position of Associate Professor at the Faculty of Physics of Sofia University.   •

That is why I strongly recommend that the Faculty Council of the Faculty of Physics of Sofia University elects Chief Assistant Professor Dr. Petya Georgieva Nedkova to the academic position Associate Professor at the Faculty of Physics of Sofia University. V. Dobrev

Date: 29.11.2019   / Prof. Dr.Sci. Vladimir Dobrev /