

JOB OFFER

Position in the project:	Postdoc (adiunkt naukowy)
Scientific discipline:	Astrophysics, Cosmology, Astronomy, Physics
Job type (employment contract/stipend):	Employment contract
Number of job offers:	2
Remuneration/stipend amount/month (<i>"X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN"</i>):	9 500 PLN/month gross (full remuneration cost, including full social security and health insurance)
Position starts on:	1 April 2019
Maximum period of contract/stipend agreement:	12-24 months
Institution:	The Faculty of Physics, Astronomy and Informatics of the Nicolaus Copernicus University in Toruń
Project leader:	Michał Zawada
Project title:	A next-generation worldwide quantum sensor network with optical atomic clocks <i>Project is carried out within the TEAM programme of the Foundation for Polish Science</i>
Project description:	In our project we will establish, with our scientific partners, the first earth-scale quantum sensor network based on optical atomic clocks with the coordination and research centre located at KL FAMO in Toruń. We will use it as an Earth-scale observatory for detecting dark matter in the form of topological defects and oscillating scalar fields and test existing hypotheses of new fields beyond the Standard Model at an unprecedented level of accuracy. The postdoc position will be a part of: <i>Theme 3: Theoretical investigation of general-relativistic effective contributions to dark matter fields</i>

	<p>The Faculty of Physics, Astronomy and Informatics of the Nicolaus Copernicus University invites applications for 12- to 24-month postdoctoral positions (adiunkt naukowy) in theoretical/observational inhomogeneous cosmology. A substantial fraction of the successful candidates' research work will be expected to focus on the possible links between inhomogeneous cosmology and dark matter, but they will also be expected to develop their own original cosmology research programs. Several such positions may be awarded.</p>
<p>Key responsibilities include:</p>	<ol style="list-style-type: none"> 1. Numerical study of megaparsec-scale curvature and backreaction as an effective source of dark matter/energy 2. Development of relativistic structure formation software: modularisation, refactoring, documentation, bug reporting and tracking 3. Analytical study of role of dark-matter-like behaviour of mean curvature and relativistic kinematical backreaction 4. Publication of results in peer-reviewed journals
<p>Profile of candidates/requirements:</p>	<ol style="list-style-type: none"> 1. Required: a doctorate in astrophysics or a closely related field. 2. Required: a growing record of publications in observational and/or numerical relativistic cosmology. 3. Preferred: development experience in general (C, fortran, autotools, git) and/or specific (Einstein Toolkit, gevolution, inhomog) scientific software 4. Preferred: research experience in either (i) inhomogeneous cosmology simulations with emerging average scalar curvature; or (ii) numerical modelling of dark-matter dominated galaxy formation.
<p>Required documents:</p>	<ol style="list-style-type: none"> 1. a cover letter, 2. curriculum vitae (including description of scientific achievements, a description of research aims, and a publication list), 3. a scan or photocopy of the candidate's doctorate (doctoral candidates must provide, before the competition deadline, a scan or photocopy of their MSc or BSc(Hons) diploma and an approximate expected date of obtaining their doctoral degree; a scan or photocopy of the doctoral diploma will be

	<p>required for formal employment);</p> <p>4. at least one (max three) reference letter(s);</p>
We offer	<ul style="list-style-type: none"> • opportunity to work in interdisciplinary research department with strong support from astronomy and physics groups within the department, • position in the professional and dynamically developing international and interdisciplinary team, • eligibility for numerous FNP, NCN and other followup grants • possibilities of foreign internships, trainings, and conference trips, • collaboration with the best research groups in the world in the field of dark matter detection with optical atomic clocks. • no teaching duties
Please submit the following documents to:	<p>please submit the aforementioned documents to castle[at]fizyka.umk.pl with annotation "Postdoc TEAM" in the subject field,</p>
Application deadline:	<p>22.02.2019</p>
For more details about the position please visit (website/webpage address):	<p>http://www.fizyka.umk.pl/~castle</p>
Euraxess job/stipend offer (in case of PhD and postdoc positions):	<p>https://euraxess.ec.europa.eu/jobs/368908</p>
<p>Please include in your offer:</p> <p>"I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the Personal Data Protection Act as of 29 August 1997, consolidated text: Journal of Laws 2016, item 922 as amended."</p>	