

VÝKONNOSTNÉ ZMLUVY SAV 2024–2026



Stratégia organizácie SAV

Astronomický ústav SAV, v. v. i.

Základné informácie o v. v. i.

Názov

Astronomický ústav SAV, v. v. i.

Štatutárny zástupca

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STRATÉGIA Astronomického ústavu SAV, v. v. i.

The Astronomical Institute of the Slovak Academy of Sciences (AI SAS) is a leading institution in astronomy and astrophysics in Slovakia with more than 80 years tradition. The main goal of the institute is to conduct excellent science and to participate, in cooperation with universities, in a PhD program. The institute consists of 3 scientific departments (Department of Solar physics, Department of Interplanetary Matter, Stellar physics department) and an administration section.

Future strategic objectives of AI SAS are based on historical tradition of the institute (e.g. focus of particular scientific departments), but mainly take into account recent recommendations formulated by the two previous international evaluations of all institutes of the Slovak Academy of Sciences. Both of them have confirmed that “the research performed at AI SAS is visible at the European level”. The main criticism was focused on the low number of PhD students and the uneven gender representation among scientists and their representation in leadership positions.

Following these evaluations, the AI SAS has defined short term (until the end of 2029) action plan with these key-points:

- 1) to focus exclusively on excellent science,
- 2) to significantly improve existing PhD program,
- 3) to enhance international visibility through the joining of international projects,
- 4) to improve the gender equality at the institute,
- 5) to continue in transfer of acquired knowledge to society.

Add 1) – AI SAS will continue in application of the strict system of the complex evaluation of the scientists which takes into account mostly the outputs published in the top-ranked journals (excellent science). The direct consequence is decision on possible extension of the employment contracts. Next to it, the top-ranked publications are financially awarded what motivates the scientists to publish their results in best journals.

Measurable indicator: yearly, at least 55% of publications listed in Q1 and 75% in Q1+Q2

Measurable indicator: clear specification of the financial benefits for top-level publications

Add 2) – To improve the quality of the provided PhD program, the AI SAS will conclude new PhD study agreements with recognized European institution and/or university. This will ensure the direct access to a larger number of potential PhD students. AI SAS will try to attract higher number of PhD student also through the promoting potential topics on international platforms, e.g. EURAXESS.

Measurable indicator: a new agreement with the recognized organization related to the PhD program

Measurable indicator: application for a PhD position within MSCA call

Add 3) – AI SAS will strength its involvement in large pan-European projects, which are included in ESFRI Roadmap, e.g. construction of the largest 4-m class European solar telescope (EST), or in further development of the world-wide used IAU MDC database (database of precise meteor orbits). Next plan is to incorporate AI SAS telescopes for night-time observations in OPTICON or similar networks to secure their optimal performance.

Measurable indicator: incorporation of the AI SAS night-time telescopes to an international network

Measurable indicator: involvement of AI SAS to an internationally significant project

Add 4) – AI SAS will continue in implementation of the requirements of Gender Equality Plan and rules of the Human Resources Strategy for Researchers (HRS4R). Desired goal is to increase number of women at the institute and consequently their involvement in leading scientific positions. AI SAS strives also for an inclusive environment for foreign workers. However, the main priority is to keep a safe, transparent and fair working environment for every employee regardless of gender, origin, etc.

Measurable indicator: 50% of the key positions (director, deputy-director, scientific secretary, head of the scientific board) at the institute lead by women

Measurable indicator: staffing procedures based on selection committees always created with respect to the requirements of the gender equality plan but with taking into account exclusively the scientific quality of the applicant.

Add 5) – AI SAS will perform substantial effort for outreach to the general public with the focus on most impact media – national TVs and radios. Special emphasis will be placed on the presentation of the institute's original scientific results on social networks to ensure the widest possible access to the public. An integral task in this field is the fight against hoaxes. Hoaxes have a negative impact on society and it is necessary to minimize it. Hoaxes from the field of astrophysics are unfortunately still too frequent, e.g. flat earth, questioning the human moon landing, hollow earth theory and of course a separate category that needs to be repeatedly explained is the issue of UFOs. Transfer of knowledge to public is therefore one of the key benefits of AI SAS mission.

Measurable indicator: the highest number of the PR outputs from all institutes included in the first scientific section of the Academy

Long-term (10 years and more) vision of the AI SAS:

An inescapable trend in current research is the requirement to obtain (at least partially) external funds from industry. For AI SAS, this can be achieved through development of new interdisciplinary fields. The link between astrophysics and physics on both laboratory and theoretical levels will therefore be gradually developed at AI SAS. New research field based on laboratory spectroscopy applied on astrophysical objects can serve as an example as the results are important to determine potential mineral resources on astronomical objects. Besides the laboratory studies we will develop also new fields oriented mainly on the investigation of relativistic objects. Next to it, we plan to introduce another type of promising theoretically-oriented research which applies some concepts from quantum information theory to astrophysics, e.g., the so-called black-hole/qubit correspondence. These new research fields are very attractive to young people and can thus help to attract a larger number of PhD students.

Another crucial aspect is the development of the human resources. Currently, many students are going to the Czech Republic to study astrophysics already at the bachelor's level. The reason is that no Slovak university provides bachelor program for astrophysics. AI SAS will try to propose series of the astrophysical lectures suitable for bachelor level and in this way contribute to the effort to create the mentioned type of study.

Despite the above, even within the ten-year horizon, the main goal of the institute is to conduct excellent science and ultimately bring new knowledge. The possible involvement of the Slovak Republic in financing the construction of the European Solar Telescope provides a real basis for the claim that Solar Physics performed at AI SAS can, within a ten-year horizon, represent an area fully comparable to the European level.