Engineering Research Institute
“Ventspils International Radioastronomy Centre”
of Ventspils University of Applied Sciences

6th International Scientific Conference
“Baltic Applied Astroinformatics and Space data Processing”
(BAASP)

PROGRAM

August 21 – 23, 2019
Ventspils, Latvia

Conference is funded by "Support to the Ventspils University of Applied Sciences in preparation of international cooperation projects for research and Innovation" Project No. 1.1.1.5/18/I/009
## WEDNESDAY, 21 AUGUST 2019

<table>
<thead>
<tr>
<th>TIME</th>
<th>OPENING EVENT (D104)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00 – 15:30</td>
<td>Arrival</td>
</tr>
<tr>
<td>15:30 – 16:00</td>
<td>Gathering at the venue, registration</td>
</tr>
<tr>
<td>16:00 – 16:05</td>
<td>Opening the event</td>
</tr>
<tr>
<td></td>
<td><em>Rector of the Ventspils University of Applied Sciences</em> Kārlis Krēsliņš</td>
</tr>
<tr>
<td>16:05 – 16:15</td>
<td>Welcome words from the Ventspils City Council</td>
</tr>
<tr>
<td></td>
<td><em>1st Deputy Chairman of the Council on Infrastructure</em> Jānis Vītoliņš</td>
</tr>
<tr>
<td>16:15 – 16:35</td>
<td>Development plans of the JIV-ERIC</td>
</tr>
<tr>
<td></td>
<td><em>Director of the Joint Institute for VLBI ERIC (JIVE)</em> Francisco Colomer</td>
</tr>
<tr>
<td>16:35 – 16:55</td>
<td>Development of science and research in Latvia</td>
</tr>
<tr>
<td></td>
<td><em>Senior Expert in Science Policy Planning of the Ministry of Education and Science</em> Lana Frančeska Dreimane</td>
</tr>
<tr>
<td></td>
<td><em>Senior Expert in International Research Cooperation Initiatives of the Ministry of Education and Science</em> Kaspars Karolis</td>
</tr>
<tr>
<td>16:55 – 17:10</td>
<td>The most significant achievements of VIRAC in recent years (RT-16, RT-32 and LOFAR)</td>
</tr>
<tr>
<td></td>
<td><em>Researcher of Ventspils International Radioastronomy Centre</em> Vladislavs Bezrukovs</td>
</tr>
<tr>
<td>17:10 – 17:55</td>
<td>Science talk “Space science frontier of radio interferometry: A view for and from Irbene”</td>
</tr>
<tr>
<td></td>
<td><em>Head of Space Science and Innovative Applications Group of the Joint Institute for VLBI ERIC (JIVE)</em> Leonid Gurvits</td>
</tr>
<tr>
<td>17:55 – 18:05</td>
<td>Speeches of the invited guests</td>
</tr>
<tr>
<td>18:05 – 18:15</td>
<td>Brief information about the BAASP 2019 programme</td>
</tr>
<tr>
<td></td>
<td><em>Chairman of the Local Organizing Committee</em> Romass Pauliks</td>
</tr>
<tr>
<td>18:15 – 20:00</td>
<td>Refreshments and informal part of the event</td>
</tr>
</tbody>
</table>
## THURSDAY, 22 AUGUST 2019

### SESSION 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration</td>
</tr>
<tr>
<td>09:00 – 09:45</td>
<td><strong>Astrochemistry during protostellar and protoplanetary evolution</strong></td>
</tr>
<tr>
<td></td>
<td>Dmitri Wiebe</td>
</tr>
<tr>
<td>09:45 – 10:30</td>
<td><strong>Radio Pulsars</strong></td>
</tr>
<tr>
<td></td>
<td>Vasily S. Beskin</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td>Coffee break (Housing D Hall)</td>
</tr>
</tbody>
</table>

### SESSION 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Galactic Astronomy (Michail Ryabov, Anton Vasynin) D104</th>
<th>Remote Sensing (Juris Žagars) D205</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 – 11:20</td>
<td><strong>150 years of the periodic system: nucleosynthesis and chemical elements in the galaxy</strong> S. Andrievsky</td>
<td>Different approaches on tree cover classification using remote sensing data L. Gulbe</td>
</tr>
<tr>
<td>11:20 – 11:40</td>
<td><strong>Studies of flaring methanol masers</strong> K. Bērziņš, I. Shmeld, A. Aberfelds</td>
<td>Land cover classification using convolutional neural networks and countrywide remote sensing data R. Ķēniņš</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Details</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12:00 – 12:20</td>
<td>The small-scale spatial distribution in the diffuse ISM: properties and impact of dust particles on the chemical evolution</td>
<td>V.A. Sokolova, A.I. Vasyunin, A.B. Ostrovskii, S. Yu. Parfenov</td>
</tr>
<tr>
<td>12:20 – 12:40</td>
<td>GNSS RTK performance improvements using Galileo satellite signal</td>
<td>J. Zvirgzds, A. Celms</td>
</tr>
<tr>
<td>12:40 – 13:00</td>
<td>Monte Carlo code and modelling of polarized radiative transfer in the envelopes of post-AGB objects</td>
<td>J. Freimanis, R. Peženkovs</td>
</tr>
<tr>
<td>13:00 – 14:00</td>
<td>Measuring molecular cloud parameters with Irbene radio telescopes</td>
<td>A. Aberfelds, A. Vasyunin</td>
</tr>
<tr>
<td>13:00 – 14:00</td>
<td>Lunch (Café in 6th floor)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SESSION 3</th>
<th>PLENARY</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00 – 14:45</td>
<td>Fast processing of low-frequency radio astronomy data using GPUs</td>
<td>Oleg Ulyanov</td>
</tr>
<tr>
<td>14:45 – 15:30</td>
<td>Antarr – Etna low-frequency antenna array</td>
<td>Gino Tuccari</td>
</tr>
<tr>
<td>15:30 – 16:00</td>
<td>Coffee break (Housing D Hall)</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>RESEARCH OF SUN STUDIES (Boris Ryabov) D104</td>
<td>DATA PROCESSING METHODS (Manfred Sneps-Snegpe) D205</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>16:00 – 16:20</td>
<td>Observations of solar active regions at the frequencies of 7.36 and 37 GHz J. Kallunki, M. Tornikoski, D. Bezrukov</td>
<td>On information transmission using orthogonal sine waves E. Tikhonov, M. Sneps-Snegpe</td>
</tr>
<tr>
<td>16:20 – 16:40</td>
<td>Observations and analyses of a dark coronal lane between the ARs 12089, 12090, and 12091 D. Bezrukovs, B. I. Ryabov, A. Vrublevskis</td>
<td>The LOFAR long-baseline calibrator survey classification statistical estimation A. Nikolajevs, K. Prusis</td>
</tr>
<tr>
<td>16:40 – 17:00</td>
<td>Reduced Microwave Brightness Temperature in a Sunspot Atmosphere due to Open Magnetic Fields A. Vrublevskis, B. I. Ryabov</td>
<td>Development of LOFAR automate data retrieval and processing tool J. Steinbergs, K. Veitners, Vl. Bezrukovs, M. Iacobelli</td>
</tr>
<tr>
<td>17:20 – 17:40</td>
<td>Methodical issues of microwave observations of the Sun with VIRAC RT-32 radio telescope D. Bezrukovs</td>
<td>Observations of astronomical objects using radio (Irbene RT32 telescope) and optical (Baldone Schmidt telescope) methods K. Skirmante, N. Jekabsons, I. Eglitis, Vl. Bezrukovs, M. Bleiders</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>17:40 – 18:00</td>
<td>Study of flux variability of radio source Taurus A (3C 144) when observing passage through solar supercorona in decimeter wave range and comparison with observations at URAN-4 phasing array in the decameter radio range A. Sukharev, M. Ryabov, V. Bezrukovs, L. Sobicnaik, O. Litvinenko, S. Panishko, M. Bleiders, A. Orbidans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analysis of context prediction models for context mixing based satellite on-board image compression J. Šate</td>
<td></td>
</tr>
<tr>
<td>18:00 – 19:00</td>
<td>Free time</td>
<td></td>
</tr>
<tr>
<td>19:00 – 21:00</td>
<td>Conference Dinner (with invitations only)</td>
<td></td>
</tr>
</tbody>
</table>

**FRIDAY, 23 AUGUST 2019**

<table>
<thead>
<tr>
<th>Session 5</th>
<th>EXTRAGALACTIC ASTRONOMY (Vladislavs Bezrukovs) D104</th>
<th>INSTRUMENTATION FOR SPACE TECHNOLOGY (Andris Slavinskis) D205</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 – 09:00</td>
<td>Registration and coffee</td>
<td></td>
</tr>
<tr>
<td>09:00 – 09:20</td>
<td>Internal structure of relativistic jets V. Beskin</td>
<td>Coulomb Drag Propulsion experiments of ESTCube-2 and FORESAIL-1 A. Slavinskis, ESTCube-2 and FORESAIL-1 teams</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>09:20 – 09:40</td>
<td><strong>Comparison rapid variability properties of BL-Lac object OJ 287 in radio and optical bands</strong>&lt;br&gt;A. Sukharev, M. Ryabov, V. Bezrukovs, M. Bleiders, A. Orbidans, S. Udovichenko, L. Keir</td>
<td></td>
</tr>
<tr>
<td>09:40 – 10:00</td>
<td><strong>Survey of Active Galactic Nuclei with RadioAstron</strong>&lt;br&gt;P.A. Voytsik for the RadioAstron AGN survey team</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:20</td>
<td><strong>Modelling of SiPM Performance for Detection of Cherenkov Radiation from Extensive Air Showers in UV- and Visible Ranges for Application at the TAIGA-IACT Telescope</strong>&lt;br&gt;A. Bogdanov, E. Kholupenko, Yu. Tuboltsev</td>
<td></td>
</tr>
<tr>
<td>10:40 – 11:00</td>
<td><strong>Small-sized, low-cost mm-wave local oscillators for the radio astronomy superheterodynes</strong>&lt;br&gt;O. Patoka, V. Myshenko, V. Shulga, A. Korolev, Yu. Karelin, D. Chechotkin, O. Antyufeyev</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>RT-16 ground station service</strong>&lt;br&gt;M. Donerblics, M. Bleiders, A Orbidāns, D. Egle</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Study of feed horn solutions for Irbene RT-32 radio telescope</strong>&lt;br&gt;M. Bleiders</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Coffee break (Housing D Hall)</strong></td>
<td></td>
</tr>
</tbody>
</table>
## VLBI METHODS
*(Vladislavs Bezrukovs) D104*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 11:00 – 11:20 | 3-Way Lunar Radio Ranging Experiment on RT-32 Radio Telescopes  
D. Marshalov, J. Ping, W. Li, M. Wang, J. Sun, Y. Bondarenko, E. Yagudina, M. Vasilyev |
| 11:20 – 11:40 | The joint SLR (optical range) and radar-VLBI (radio range)  
satellite observations using VIRAC radio telescopes RT32 and RT16 and SLR station Riga  
K. Skirmante, N. Jekabsons, K. Salmis |
| 11:40 – 12:00 | Overview of VLBI observations in Irbene – Torun baseline  
| 12:00 – 12:20 | Data reduction and imaging of gravitational lens system class  
K. Prusis, A. Nikolajevs |
| 12:20 – 12:40 | VLBI network for monitoring of geostationary satellites  
M. Kaliuzhnyi, Z. Zhang, F. Bushuev, O. Shulga, Vl. Bezrukovs, O. Reznichenko, S. Melnychuk, Y. Malynovskiy |
| 12:40 – 13:00 | Closing Remarks |
| 13:00 – 14:00 | Lunch (Café in 6th floor) |
| 14:00 – 15:00 | Side Meetings |
| 15:00 – 18:00 | Excursion (with previous registration only) |