

# RadioNet support for scientific events

## Application form

EVENT INFORMATION	
TITLE	IAU Symposium 333, "Peering towards Cosmic Dawn" ( <a href="https://iaus333.irb.hr">https://iaus333.irb.hr</a> )
PLACE	Dubrovnik, Croatia
ORGANISER'S INSTITUTE	V. Jelic, Ruder Boskovic Institute, Croatia and J.M. van der Hulst, Kapteyn Astronomical Institute, The Netherlands
DATE	2 - 6 October 2017
NO. OF PARTICIPANTS	120
TOTAL EVENT COST	€ 44 000
OTHER SOURCES OF FUNDING	ASTRON € 1 000; Kapteyn Astronomical Institute, RuG € 1 000; Croatian Ministry of Science and Education € 2 400; Registration fee (estimated on 100 paying participants) € 25 000; ESTIMATED TOTAL OF € 29 400
<b>REQUEST</b> <i>(max 2 pages)</i>	
Requested contribution [EURO]	€ 5500
Use of the RadioNet contribution	<p>The RadioNet contribution will be used to support participants (travel, lodging and meals expenses for invited speakers and young scientists) and logistical costs, as follows:</p> <ul style="list-style-type: none"> <li>(i) support for invited speakers € 2 000</li> <li>(ii) support for young scientists € 3 000</li> <li>(iii) other logistical costs € 500</li> </ul> <p>Priority will be given to participants presenting scientific results obtained by RadioNet associated observatories.</p> <p>The overall budget of € 44 000 is as follows:</p> <ul style="list-style-type: none"> <li>(a) coffee and lunch breaks € 18 000</li> <li>(b) conference room € 800</li> <li>(c) conference dinner € 8 000</li> <li>(d) support for invited speakers and young scientists € 15 400</li> <li>(e) conference proceedings € 1 800</li> </ul>
How the event fits in the RadioNet framework	<p>The rationale for organising this conference is the following. A very fundamental and yet unsolved question is when and where the first sources formed in the early Universe and began (re)ionising the predominantly neutral all-pervasive intergalactic medium. This Epoch of Reionization (EoR), thought to occur at redshift <math>z \sim 6-15</math>, is currently subject of ongoing studies using infrared (IR) and radio telescopes. Whereas IR detections have been made of sources (Lyman-<math>\alpha</math> emitters, quasars and drop-outs) in this redshift regime in relatively small fields of view, no direct detection of neutral hydrogen, via the redshifted 21-cm line, has yet been established. Such a direct detection is expected in the coming years, from ongoing surveys, and will open up not only the EoR, but also the preceding and very</p>

	<p>interesting Cosmic Dawn period (CD, <math>z \sim 15-30</math>).</p> <p>All current radio astronomical experiments (e.g. EDGES, LOFAR, MWA and PAPER) attempt statistical detections of the 21-cm signal during the EoR, with limited signal-to-noise. Direct imaging, except maybe on the largest (degree) scales at lower redshifts, as well as higher redshifts will remain out of reach. Future radio telescopes (e.g. HERA and SKA) will revolutionize the field, allowing direct imaging of neutral hydrogen from scales of arc-minutes to degrees over most of the relevant redshift range (<math>z \sim 6-30</math>) and, in parallel, provide enormous potential for synergy with other upcoming facilities (e.g. LSST, WST).</p> <p>In all of these experiments the cosmological 21-cm signal is, however, buried under prominent Galactic and extragalactic foregrounds that make the observations extremely challenging. The success of detection relies on our understanding of the foregrounds and development of good foreground removal techniques. This problem has common ground with the CMB studies, though the application to CD/EoR science is different in many respects. Obviously, studying the physical origin of these foregrounds, whether Galactic or extragalactic, constitutes a very interesting and exciting field in its own right and is of fundamental importance for perfecting the removal from the observations.</p> <p>This conference therefore addresses a broad range of important and timely scientific questions, which have in common that modern radio telescopes are essential for resolving them. Many of the relevant facilities are RadioNet associated observatories.</p>
<p>Relevance of the event for RadioNet</p>	<p>This symposium will highlight the accomplishments of several RadioNet associated facilities, in particular LOFAR as the premier instrument to probe the signal of the EoR and simultaneously measure all emission from the contaminating (but scientifically interesting) foregrounds. The conference topics are:</p> <ul style="list-style-type: none"> <li>(a) Cosmic Dawn and Epoch of Reionization: theory and simulations</li> <li>(b) Epoch of Reionization: observations and challenges</li> <li>(c) The first stars/galaxies and Epoch of Reionization</li> <li>(d) Galactic foreground science: radio emission, polarization, ISM and magnetic fields</li> <li>(e) Galactic foreground science: multi-wavelength approach to disentangling foreground</li> <li>(f) Extragalactic foregrounds science: radio galaxies and clusters</li> <li>(g) Extragalactic foregrounds science: multi-wavelength approach and cosmic evolution</li> <li>(h) Foreground removal techniques: CMB and EoR experiments</li> </ul> <p>Dissemination of knowledge about these topics is given by the participants who come from different fields of radio astronomy will be a very important result of this meeting, as well as spreading the notion that the RadioNet facilities are supporting fore-front science.</p>
<p>Ethics</p>	<p>IAU Symposium 333 is dedicated to providing a harassment-free experience for everyone, regardless of gender, sexual orientation, disability, physical appearance, body size, race, nationality, or religion. We do not tolerate harassment of participants in any form. We published a clear code of conduct on our website (<a href="http://iaus333.irb.hr">http://iaus333.irb.hr</a>), so all participants are aware of this.</p>