

RadioNet support for scientific events

Application form

EVENT INFORMATION	
TITLE	The Power of Faraday Tomography: towards 3D mapping of cosmic magnetic fields
PLACE	Miyazaki, Japan
ORGANISER'S INSTITUTE NAME	Radboud University, Nijmegen, the Netherlands Contact person: Marijke Haverkorn AND Kyushu University, Fukuoka, Japan Contact person: Mami Machida
DATE	28 May – 2 June 2018
NO. OF PARTICIPANTS	~ 60 persons
TOTAL EVENT COST	30,000 Euro (basic organizational costs only)
RADIONET SUPPORT	3,000 Euro (additional travel support for key participants)
OTHER SOURCES OF FUNDING	Basic organizational cost is covered by Japanese funding. Unfortunately, our application for the JSPS-NWO Bilateral Japanese-Dutch funding program (https://www.nwo.nl/en/research-and-results/programmes/nwo/cooperation-japan-jsps/index.html) has just been rejected. As we have a fair number of (e.g. young) researchers who do not have sufficient funds to participate, we have applied for travel and accommodation support for some participants through NAOJ meeting support and the Japanese Foundation for Promotion of Astronomy. Results from these funding applications will not be known until March.
REQUEST	
(max. 2 pages)	
Short abstract of the event	<p>The conference “The Power of Faraday Tomography: towards 3D mapping of cosmic magnetic fields” will be held from May 28 to June 2, in Miyazaki, Japan. I am the co-chair of the Scientific Organization Committee (SOC) of this conference.</p> <p>Recent low-frequency radio interferometers such as LOFAR have allowed an entirely new analysis method of polarized synchrotron emission called Faraday Tomography. Using this technique, we can for the first time disentangle various Faraday rotation components (proxy of varying magnetic fields) along the line of sight, where before only integrated/average values were possible. However, this technique has complex selection effects and introduces complex artifacts in the measurements, which need to be understood.</p> <p>The focus of this conference is bringing together experts of Faraday Tomography with experts in observational, numerical and theoretical cosmic magnetism studies. Special attention will be given to educational aspects and training of young (radio) astronomers, e.g. with tutorial sessions of various radio-astronomical software.</p>

Relevance for RadioNet	LOFAR, one of the RadioNet infrastructures, plays a large role in the topic of this conference. Most pioneering low-frequency spectro-polarimetric studies of diffuse plasmas in the Universe have been done with LOFAR (e.g., Iacobelli et al 2013, Jelic et al 2014, 2015, Van Eck et al 2017). The outlook to SKA has led to development of advanced methods to study cosmic magnetism with current and next-generation interferometers (e.g. Vacca et al 2016, Akahori et al 2016), which will be discussed at this conference.
Impact on RadioNet	A main goal of this conference is dissemination of knowledge regarding Faraday Tomography and the use of low-frequency radiopolarimetry in general, and training of the next generation of radio astronomers. Therefore, we expect that this conference will help in building and broadening the LOFAR/SKA user base. In addition, the presentation and discussion of new results will be beneficial for the progress and science output of the current generation of low-frequency polarimetry experts.
Use of the RadioNet contribution	<p>For all invited speakers, the conference fee and accommodation/subsistence costs are paid for by the conference organization. However, there are two invited speakers and an SOC member who cannot provide their own travel support for various reasons. These are the following people:</p> <ul style="list-style-type: none"> • Dr. Valentina Vacca (INAF Cagliari, Italy): Valentina is a specialist in detection of magnetic fields in cosmic large-scale filaments, one of the key science topics for the SKA, and chair of the Filaments Working Group of the LOFAR Magnetism Key Science Project. She was asked to be the invited speaker in the session "Cosmology, Large-scale Structure and Galaxy Clusters". • Dr. Cameron Van Eck (Radboud University, currently in Edmonton, Canada): Cameron is a pioneer in using and interpreting LOFAR Faraday Tomography of the local magnetized interstellar medium. He was asked to be the invited speaker in the session "Magnetic Fields in The Milky Way". • Dr. Jamie Farnes (Oxford University): Jamie is an expert in magnetism in the high-redshift universe, SOC member and indeed one of the two initiators of this meeting. His expertise on low-frequency radio-polarimetry and his contributions to the tutorial sessions will be extremely valuable. <p>Valentina Vacca has some but minimal general travel support from her institute, but Jamie Farnes and Cameron Van Eck are currently without any travel funds. However, the SOC is of the opinion that the attendance of each of these three people is crucial to the conference, due to their complementary expertise and large role in the scientific community. Therefore, as a representative of the SOC, I would like to request funding for the travel of these three people from their residence to Miyazaki and back.</p>
Ethics	In organizing this conference, we have tried to take into account gender, ethnic and geographic diversity. Also, particular attention has been given to inviting excellent young researchers at the start of their careers, hoping that this conference will support them on their career paths. Participation of these three key people would be in line with these goals.