

Call for Proposals on IRAM Telescopes

The deadline for submission of observing proposals on IRAM telescopes, both the NOEMA interferometer and the 30-meter telescope, covering the scheduling period 1 December 2018 to 31 May 2019, is

13 September 2018, 17:00 CEST (UT + 2 hours)
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IRAM proposals should be submitted through the *Proposal Management System* (PMS) at URL:

<http://pms.iram.fr/>

PMS provides on-screen instructions to guide the proposal editor through the submission process. The procedure consists in filling in an on-line form with the details of the requested observations (source coordinates, receiver setups, array configuration, etc.), and to upload a single file in pdf format containing the scientific and technical justification. A L^AT_EX template is provided from the PMS submission page for your convenience. This file may be customized, or the pdf file can be generated with another software, but in any case **proposers should respect the following requirements**: (1) A normal proposal may contain up to two pages of text describing the scientific aims and the technical justification (4 pages for a Large Program, see below) (2) up to two pages of figures, tables, and references may be added (but the text should not be mixed with figures, tables, and references!), and (3) the font size must be at least 11pt.

For a proposal to be complete, PMS requires that all authors validate their identity (e-mail and affiliation) and their participation to the proposal before the deadline. The editor of the proposal will have to send invitations to all authors through PMS by clicking an *invitation* button. We urge proposal editors to invite the authors through PMS well before the deadline to give them enough time to validate their identity before the deadline. Authors that fail to validate their participation will automatically be dropped from the proposal.

PMS will be opened for submission of new proposals about three weeks before the deadline¹. Proposers may modify their proposals in PMS until the deadline, in which case the *submit* button must be activated again after modification of the proposal. Please avoid last minute submissions when the network could be congested. If you experience any difficulty with the submission process in PMS, please contact us at pms-feedback@iram.fr for help. You may also use this e-mail address for bug reports, general questions and comments.

Detailed information on time estimates, special observing modes, technical information and references for both the NOEMA interferometer and the 30-meter telescope can be found on the IRAM web site, under the **science users** tab:

<http://www.iram-institute.org/>

Proposers are encouraged to use the CDS (*Centre de Données astronomiques de Strasbourg*) to check whether a source has already been observed at the 30-meter telescope or the NOEMA interferometer. We recommend to use the **VizieR Catalogue Service** to query² the header data of IRAM observations obtained since September 2009 for the 30-meter telescope, and ab initio (December 1990) for PdBI/NOEMA.

The source areas to be mapped by the guaranteed time large NIKA2 programs are "fenced" against new continuum 2mm/1mm mapping projects at the 30-meter telescope or mosaicing projects at NOEMA. To inform observers, proposal abstracts and a complete source list is available on the **NIKA2 home page**.

We encourage the submission of **Large Observing Programs** (LPs) that require more than 100 hours of observing time and that address strategic scientific issues, using NOEMA or the 30-meter telescope with EMIR or HERA. However, as a significant investment of technical time is still needed for the NOEMA project, restrictions in terms of available observing time for NOEMA LPs will again apply for the upcoming winter semester 2018/2019, similar to the previous summer semester 2018. You may consult the **Large Program Policy** on the **IRAM web site** for further details.

The 30-meter telescope will be open for 3 mm and 1 mm VLBI proposals.

¹PMS remains open at all times for submission of Director Discretionary Time proposals.

²search *IRAM* as catalogue name.

Publications resulting from NOEMA or 30-meter telescope observations should mention this in an acknowledgment “Based on observations carried out under project number XYYZZ [XXX-YY] with the IRAM NOEMA Interferometer [30-meter telescope]. IRAM is supported by INSU/CNRS (France), MPG (Germany) and IGN (Spain)”. IRAM welcomes an acknowledgment to the IRAM staff for help provided during the observations and for data reduction.

M. Krips & C. Kramer

The 30-meter Telescope

Proposals for three instruments will be considered for the coming semester (1 December 2018 to 31 May 2019):

1. EMIR, offering four bands at 3, 2, 1.3, and 0.9 mm wavelengths in both polarisations.
2. HERA, the 9 pixel dual-polarization heterodyne receiver array operating at 1.3 mm wavelength.
3. NIKA2, the second generation New-IRAM-KID-Array, working simultaneously at 1.15 and 2 mm with a field-of-view of 6.5'.

The two heterodyne frontends, EMIR and HERA, can be connected to a suite of narrow- and broad-band spectrometers with resolutions ranging from 3.3 kHz to 2 MHz, and bandwidths of up to 32 GHz. During the winter semester emphasis will be put on observations at the shorter wavelengths but 3 mm proposals are also encouraged, particularly if they are suited for medium or low quality weather backup. As in previous semesters, we will offer several weeks of pooled observations in order to optimize the use of the telescope. Proposers are requested to use the EMIR and HERA time estimators which are available online via the [IRAM 30-meter telescope webpage](#).

NIKA2 projects will be observed in one-week blocks of pooled observations. Proposers are requested to use the NIKA2 time estimator python script which is available online via the [NIKA2 home page](#). The new IRAM data processing software will not be ready before the end of 2018. However, the IDL data pipeline which has been developed by the NIKA2 consortium may be used to reduce NIKA2 data. If need be, a friend-of-the-project will be assigned to provide help and advice in the initial data reduction using this pipeline. It may take several weeks after a run, during which the calibration scans and in particular the skydips are analyzed, and calibration parameters are derived, before final calibration products become available. NIKA2 1 mm polarimetry is currently being tested and commissioned, and is not yet offered to the community for the upcoming winter semester.

A detailed account of the current observatory capabilities is available in a separate document on the [Call for Proposals web page](#).

What is new?

Inside NIKA2, a dichroic mirror splits the two frequencies centered at 150 and 260 GHz. As the current mirror shows some weaknesses, a new dichroic mirror has been fabricated at Cardiff University who also successfully tested it at room temperature. End of August, it is planned to open the NIKA2 cryostat inside the receiver cabin to install the new dichroic. Testing and re-commissioning of NIKA2 is then planned for two sessions in September.

To measure the NIKA2 filter curves around 150 and 260 GHz at the telescope, a new, compact Martin Puplett interferometer (PIMP) has been built at IRAM/Grenoble. End of June, it was testwise installed in front of the cryostat, to measure the current curves. A good knowledge of the in-situ filter curves is needed to color-correct the astronomical data.

C. Kramer

The NOEMA Interferometer

What is new?

Antenna 10 is expected to join the interferometer for scientific exploitation on a best effort basis toward the end of 2018, bringing the NOEMA project closer and closer to its full completion.

Main capabilities for NOEMA offered in the current Call:

Correlator: The wide-band correlator *PolyFiX* processes an instantaneous bandwidth of 31 GHz that is distributed over two 7.744 GHz wide sidebands and two orthogonal linear polarisations for a default spectral resolution of 2 MHz. Additionally, a large number of high spectral resolution windows can be defined in each sideband and polarisation, providing in a first implementation step of *PolyFiX*, a fixed spectral resolution of 62.5 kHz.

Bands: Bands 1 ($\lambda \approx 3\text{mm}$), 2 ($\lambda \approx 2\text{mm}$) and 3 ($\lambda \approx 1\text{mm}$) will be available for this Call, while band 4 ($\lambda \approx 0.8\text{mm}$) will not be offered. The nominal sky frequency ranges covered by each of the three available bands are specified in Table 3 in the specific document on the **current status of NOEMA**.

Software: The use of the `aug18` version (or later) of GILDAS is mandatory to prepare your proposals, especially its package `ASTRO` needs to be used to configure the *PolyFiX* spectral setups.

Configurations: During the winter semester we plan to schedule three different configurations; a preliminary configuration schedule is outlined below (see Table 1). The stations used in each configuration vary between the nine and ten-antenna arrays and are hence given in Table 2 for both cases³. Adjustments to this provisional configuration planning will be made according to commissioning requirements in the frame of NOEMA, availability of antenna 10, proposal pressure, weather conditions, and other contingencies:

Table 1: Configuration Schedule for the Winter 2018/2019 period

Conf	Scheduling Priority
C	November – December
D	December – January
A	January – February
C	February – March
D	March – May

Table 2: Configurations of the nine- and ten-antenna arrays

Name	Stations									
9D	W12	W09	W05	E10	E04	N13	N09	N05	N02	—
9C	W20	W12	W09	E16	E10	E03	N29	N20	N11	—
9A	W27	W10	E68	E24	E12	E04	N46	N29	N20	—
10D	W12	W08	W05	E10	E04	N17	N13	N09	N05	N02
10C	W23	W20	W09	E23	E18	E10	E03	N20	N17	N11
10A	W27	W23	W08	E68	E24	E16	E03	N46	N29	N20

A detailed description of the current NOEMA capabilities and organizational considerations are given in a separate document on the Call for Proposals pages (or click directly on this link for the pdf document).

M. Krips

³Calculations on telescope times and rms noise levels, however, should be based on a nine-antenna array and will be automatically adjusted by us as soon as Antenna 10 is available.

Guidelines for Observing Time at the IRAM Facilities

Considering the much increased time requests for the IRAM telescopes over the last few years, taking into account the science operations of ALMA, and considering the substantial new investments of the IRAM partners into upgrading the Plateau de Bure interferometer into NOEMA, the following guidelines for allocation of telescope time are to be considered:

1. In deciding on proposal rankings the Program Committee is requested to take into account the publication record and impact of the proposers with previous IRAM telescope time allocations.
2. The proposers should note in their application whether the same or a similar proposal was or is intended to be submitted to ALMA, in which case a special justification is required why IRAM telescope time is needed.
3. Up to 15% of the available observing time may be invested into projects submitted by PIs affiliated with institutes in non-IRAM partner countries.
4. The fraction of time for Large Programs (a detailed description is given on the IRAM website) can be expanded to a total of about **50% of the scheduled telescope time on the IRAM 30-meter telescope while a smaller fraction will be reserved for NOEMA. A significant amount of technical time is still needed to upgrade the observatory to the full NOEMA capabilities.** In order to ensure proper management of these programs in close interaction with the IRAM observatory, including the provision of suitable archive data products for the general scientific community, only programs led by a PI located in one of the IRAM partner countries will be considered.
5. Once accepted, PIs of Large Programs cannot submit other proposals (as PI) during the active time of the Large Program.

Finally, we inform that the IRAM partners can reserve time for mutually agreed “Observatory Programs”.

Data policy

The IRAM data policy is as follows:

- IRAM organizes storage of raw and online calibrated data for the 30-meter telescope and storage of raw data for PdBI/NOEMA on unlimited time scales.
- Header information of PdBI/NOEMA observations later than December 1990 can be found **here in the CDS** (*Centre de Données astronomiques de Strasbourg*).
- Header information of 30-meter telescope observations later than 2009 can be found **here in the CDS**.
- Programs are distinguished between normal programs and Large Programs. Data from Large Programs are public also in calibrated format after an 18 month proprietary period (counting from the end of the last semester of observations) and are accessible through the **IRAM Large Program Archive**.
- Raw data from PdBI/NOEMA or online calibrated data from the 30-meter telescope of individual normal programs may be provided by IRAM after a three year proprietary period (again counting from the end of the last semester of observations) and depending on Director’s decision. Multiple

large scale requests are excluded. IRAM does not provide support for data reduction of such retrieved data. Referencing of these data should follow the [IRAM Data Publication Policies](#) and in addition include at least one reference to publications of the PI team, or the PI name and program number in case the data have not yet been published.

RadioNet Travel Funds

Starting January 1, 2017, observations with the IRAM facilities are supported by RadioNet under Horizon 2020, the European Framework Program for Research and Innovation. Within this program, IRAM is committed to offering Transnational Access (TA) for scientists from all over the world, an initiative aimed at facilitating access to radioastronomical infrastructures and enabling scientists to conduct research at the forefront of technological innovation.

As part of this initiative, travel funds are now available to support visits of TA eligible astronomers engaged in research with the IRAM facilities. Travels may be supported to the 30-meter telescope for observations (contact: C. Kramer) and to IRAM Grenoble for the reduction of NOEMA data (contact: J.M. Winters). The [RadioNet home page](#) provides first information. The Principal Investigators of IRAM proposals eligible for TA funding will be informed individually.

All TA-supported projects that are scheduled at the NOEMA interferometer or at the 30-meter telescope must acknowledge the support from the European Union by including the following sentence in the publications resulting from their observations: *The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 730562 [RadioNet].*

C. Kramer & J.M. Winters