DEMO PMS:
Proposal Management System

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10th IRAM millimeter Interferometry School

Picture: AZPEITIA Jean Jacques
NOEMA proposal preparation:

1) Scientific goal?
   - Source
   - Line or continuum
   - Spatial resolution: low or high
   - Spectral resolution: low or high
   - Detection/mapping
   - Context
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IN PRACTICE:

- check CDS (duplication) + ASTRO
- at which frequency
- with which spectral resolution?
- which array configuration?
- Detection = sensitivity
  Mapping = Time On Source (TOS)
- Prepare arguments for the PC
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2) Agreement with the call for proposal

Summer semester: compact configurations, low frequencies
Winter semester: extended configurations, high frequencies
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   **Summer semester:** compact configurations, low frequencies
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2 key documents: [http://www.iram-institute.org](http://www.iram-institute.org)

Science Users > Proposals > Call for Proposals

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**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)

IRAM proposals should be submitted through the [Proposal Management System (PMS)](http://pms.iram.fr/) at URL:

http://pms.iram.fr/
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   - On line form with technical details
     (source coordinates, array configuration…)

   - PDF file with scientific and technical justifications:
     - 2 pages of text (4 pages for Large Programs > 100 hours)
     - 2 pages of figures, tables, references (well-separated!)
     - font size 11pt or larger (LATEX template)
FAKE session created for the school: pmssrv.iram.fr

First step: create an account
You can test yourself but do not invite Cols.
To sort proposals by topics for the Program Committee
2 examples:

• Mosaic of a protostar and its outflow (L1157):
  **first goal:** lines
  **bonus:** continuum
  mosaic size: 2.5 arcmin² - sensitivity 2.0 mJy/beam

• CO(2-1) observations of redshifted galaxies
  line width 500km.s⁻¹ / resolution=100km.s⁻¹
  line strength: 2 mJy/beam
One single proposal for both observatories (NOEMA + 30m)
Was your project partly observed?

http://www.iram.fr/IRAMFR/PDB/ongoing-last.html

B rated project might not be observed during the current semester
A rated project might not be carried over into next semester

It can be resubmitted for the next semester if it is compatible with the call
Cols selection can be an argument for the PC: give details of their role if relevant in attached PDF file

if they do not validate (7 days after the deadline) they will disappear from the proposal header
2 examples:

- Mosaic of a protostar and its outflow (L1157):
  **first goal:** lines
  **bonus:** continuum
  mosaic size: 2.5 arcmin$^2$ - sensitivity 2.0 mJy/beam

- CO(2-1) observations of redshifted galaxies
  line width: 500 km.s$^{-1}$
  line strength: 2 mJy/beam with 100 km.s$^{-1}$
L1157 mosaic

**Technical sheet**

- **Title**: L1157 mosaic
- **Proposal**: P350096
- **Type**: Point source detection, Single field mapping, Mosaic mapping
- **Science**: Lines & continuum, Only lines, Only continuum

**Instrumental tuning**

- **Frequency range**: 84.96 GHz to 85.05 GHz
- **Channel spacing**: 2 MHz
- **Number of channels**: 256

**Mosaic**

- **Input Area**: Input offsets
- **Mosaic area**: 2.5 arcmin^2

**Time settings**

- **Representative frequency**: 84.50 GHz
- **Spectral resolution**: 1.650 km/s (min. 0.222 km/s)

**Source properties for lines**

- **Smallest resolved scales**: 6.0 arcsec
- **Largest scales**: 15.0 arcsec
- **Expected signal**: > 50.0 mK
- **Expected line width**: 8.0 km/s

**Source properties for continuum**

- **Smallest resolved scales**: 5.0 arcsec
- **Largest scales**: 15.0 arcsec
- **Expected signal**: 300.0 microJy/beam, SNR: 37

**Summary**

- **Total observing time**: 33.60 hours

**Source L1157**

- **Proposal**: P350096
- **Id**: L1157
- **Epoch**: J2000
- **RA**: 20:39:10.000
- **DEC**: 68:01:20.000
- **Vlsr (km/s)**: 2.6

**Configuration**

- Typical angular resolution: 4.6
- Telescope time (hours): 33.6
- Line sensitivity (mJy/beam): 12.4 (1.5)
- Continuum sensitivity (microJy/beam): 8.2

**Talk by J. Boissier**
Observing star formation in galaxies

galaxies.cat

Ga11 EQ 2000 00:00:00.00 50:00:00.00 RED 1.6
Ga12 EQ 2000 01:00:00.00 50:00:00.00 RED 1.8
Ga13 EQ 2000 02:00:00.00 50:00:00.00 RED 2.0
Ga14 EQ 2000 03:00:00.00 50:00:00.00 RED 2.2
Ga15 EQ 2000 04:00:00.00 50:00:00.00 RED 2.6

Fsky = Frest/(1+z)
Frest = 230.538GHz

Redshifts are now supported by PMS

Redshift + Rest frequency

OR

LSR 0.0 + Redshifted frequency
Observing star formation in galaxies

galaxies.cat

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<table>
<thead>
<tr>
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<td>EQ</td>
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<td>50:00:00.00</td>
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<tr>
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<td>EQ</td>
<td>2000</td>
<td>01:00:00.00</td>
<td>50:00:00.00</td>
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<tr>
<td>Gal3</td>
<td>EQ</td>
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<td>50:00:00.00</td>
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<td>50:00:00.00</td>
<td>RED 2.2</td>
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<td>04:00:00.00</td>
<td>50:00:00.00</td>
<td>RED 2.6</td>
</tr>
</tbody>
</table>

F\text{sky} = \frac{F\text{rest}}{1+z}

F\text{rest} = 230.538\text{GHz}

What is possible?

Redshifts are now supported by PMS

At higher redshift, CO(3-2) could be observed: F\text{rest} = 345.796\text{GHz}

Demo with Gal3 and Gal5
Observing star formation in galaxies

Setup 1: CO(2-1)

**Technical sheet**

- **Title**: galaxy survey
- **Proposal**: P350132
- **Type**: Point source detection, Single field mapping
- **Science**: lines & continuum

**Instrumental tuning**

- **Rest frequency**: 230.538 GHz
- **Source Redshift**: 2.0
- **Spectral resolution**: 100.000 km/s

**Time settings**

- **Representative frequency**: 230.538 GHz
- **Spectral resolution**: 100.000 km/s
- **Requested time fraction per configuration**: 100.0 %
- **Requested telescope time**: 8.00 hours

- **Typical declination**: 50.0 deg
- **Ts range over the bandwidth**: 76.7 - 114.3 K
- **Resulting line sensitivity at representative frequency**: 256.8 microJy/beam
- **Resulting continuum sensitivity**: 10.4 microJy/beam
Observing star formation in galaxies

Setup 2: CO(3-2)
Observing star formation in galaxies

Frequency coverage obtained with the two setups:
Observing star formation in galaxies

Frequency coverage obtained with the two setups:

You better use ASTRO to prepare spectral surveys

ASTRO> tuning 76.846 LSB 6154 /FIXED_FREQ

7744MHz between the two

ASTRO> tuning 84.59 LSB 6154 /FIXED_FREQ
Observing star formation in galaxies

Frequency coverage obtained with the two setups:

You better use ASTRO to prepare spectral surveys

Then in PMS you can put the representative frequency where you like
What about sun avoidance?

talk by M. Krips

<table>
<thead>
<tr>
<th>Source</th>
<th>Sun distance</th>
<th>Avoidance</th>
<th>Date Range</th>
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<tbody>
<tr>
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<tr>
<td>Gal1</td>
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<tr>
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<tr>
<td>Gal3</td>
<td>131.3</td>
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<td>125.7</td>
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<tr>
<td>Gal5</td>
<td>118.0</td>
<td>Avoidance</td>
<td>14-MAY-2019 to 15-JUN-2019</td>
</tr>
</tbody>
</table>
And low declination source?

Talk by M. Krips

Low declination source in Ophiuchus
16:30:00.00 -24:00:00.00

It is doable with Noema but challenging!
You need to adapt time on source!
Why do you need to adapt the TOS?

Low elevation = higher Tsys + shadowing

Plot credit: P. Chaudet
Give your best effort to convince the Program Committee of the feasibility of your project:

- + correct estimation of the time on source
- + agreement with the CALL for proposal
- + science justification and role of cols if relevant

Do not hesitate to send a mail to sog@iram.fr if you have questions when preparing your proposal!