OH Masers Towards High Mass Star Formation Regions

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Observations
- Arecibo Telescope
- Interim Correlator
- Position Switching Mode
- 9 level A & B Pol
- C (∆ν = 1.56 MHz) and C-high (∆ν = 3.125 MHz) bands
- OH Spectral line observation: 4660, 4751, 4766 MHz and 6017, 6031, 6035 MHz
- CH₃OH: 6668 MHz and H₂CO: 4830 MHz

Data Reduction
- Raw Data:
- Add Pols:

G45.466+0.045
MSX 8 µm

G45.122+0.133
MSX 8 µm
Data Reduction

Raw Data:

Add Pols:
Baseline fitting
Mask

Avg, Bsl, Smth Spectrum:
Fitting
Gaussian components
attempt #1
Residual

Results

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency (GHz)</th>
<th>Central Velocities (km/s)</th>
<th>Peak Intensity (mJy)</th>
<th>FWHM (km/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G45-466+0.40</td>
<td>6.75h</td>
<td>65.0, 64.6, 63.5, 62.0</td>
<td>50, 40, 30, 20</td>
<td>7.2, 6.9, 6.6, 6.3</td>
</tr>
<tr>
<td>G45-466+0.55</td>
<td>6.75h</td>
<td>50.3</td>
<td>40, 30, 20</td>
<td>7.2, 6.9, 6.6, 6.3</td>
</tr>
<tr>
<td>G45-466+0.60</td>
<td>6.75h</td>
<td>50.3, 45.0, 40.0</td>
<td>35, 30, 20</td>
<td>7.2, 6.9, 6.6, 6.3</td>
</tr>
<tr>
<td>G45-132+0.20</td>
<td>7.55h</td>
<td>60.3, 54.7</td>
<td>10, 9, 8</td>
<td>7.2, 6.9, 6.6, 6.3</td>
</tr>
<tr>
<td>G45-132+0.30</td>
<td>7.55h</td>
<td>60.3, 54.7</td>
<td>10, 9, 8</td>
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Basic Data Interpretation

- Line Widths
  - Narrow: Maser Emission
  - Broad: Thermal Emission
- Range in Central Velocities
  - Maser emission from different clumps in source
- No Methanol Maser Observed
  - More evolved regions?
- Formaldehyde Absorption
  - Clouds along the line of sight