

# Surveys And Large Programs

with ALMA

(or the finest data you can ever dream about ...)

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# Interest for Large Programs and Surveys

- **ALMA Context: high competition between Europe and America**
- **Competition also inside Europe...**
- ... tradition of large collaborations sometimes missing ...
  - **Many people will observe the same objects** with about the same instrument configuration (sensitivity, angular resolution, frequency, spectral lines... )
  - **Statistics** require, if possible, more than three objects ...
  - How to get observing time for 50-100 objects when you are alone ?
  - **Several proposals** to write, **several observing periods** (2-4 years )?
  - Observations obtained under **various weather (and technical) conditions** ...
- No Guaranteed time (mostly successful for organized consortia, eg ISO)

# Necessity of Large Programs and Surveys

- How to optimize both the array and the user's efficiencies ?
- By performing Large Programs and Surveys ...
  - Larger sample than the sum of the objects observed by various groups...
  - The observing strategy has been optimized (global strategy is possible)
  - Homogeneous sample (calibration, rms...)
  - Finest calibration (e.g. better flux accuracy for measurements of spectral indices)
  - Data published soon after the observations are complete
  - Core of a robust data-base and a start for new (and individual) papers & proposals
- At the benefit of everybody in the world...

# Strategy for Large Programs and Surveys?

- **Identify domains:**
  - A significant fraction of the projects ( $> 20 - 30\%$  ALMA observing time)
  - Ideally: large community on both side of the Atlantic
- **How to guarantee the success ?**
  - **Content:**  $\sim 85\%$  for “basic” science (spectral and continuum surveys)  
 $\sim 15\%$  left for risky projects pushing ALMA at its limits.
  - Coordination (PI) done by a mm expert recognized as a specialist of the field should supervise the data reduction and guaranty the final quality
  - ALMA staff is encouraged to participate as regular members of the team should monitor observations and data reduction with the coordinator
  - **Everybody inside the consortium should participate**
  - Fast but safe publication: images, sizes, simple analysis: public data-base ...
  - **Goal: avoid controversy about the observations: “detection” versus “no detection”**
- Followed (soon) by a second generation of papers including sophisticated modelings written by individual groups