



# Simulations for ALMA

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# Why do we need simulations?

- **Decide what science we can do with ALMA**
- **Convince the user community and funding agencies to build and operate ALMA**
- **Design the instrument**
  - **Antenna locations**
  - **Realistic performance estimates**
- **Tool for observation planning**
  - **Optimize configuration**
  - **Coverage, sensitivity**
  - **Dependence on atmospheric conditions**
- **Work out how to reduce the data**



# What might we achieve at this meeting?

- **Find out what simulations have been done for ALMA?**
  - Compare results from different approaches
  - Can we do significantly better?
- **What can we learn from other projects?**
- **Decide what new simulations are needed**
  - More realistic error sources (atmosphere, antenna optics, instrumental)
  - WVR, fast switching, fringe-fitting, ...
  - Polarization
  - Single-dish and array combination issues
  - Deconvolution



# What might we achieve at this meeting (2)?

- **Work out how to make simulations useful for observation preparation and processing**
  - **How can simulations best be used to help users to prepare observations?**
  - **Make a library of simulations?**
- **Sort out the remaining pad location issues**