

# Summary: How To autoMAGIC

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## **autoMAGIC Workshop Padova**

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## ➤ **1. Find out if your analysis is possible with autoMAGIC**

- Does the Analysis need any non-standard settings?
- On which data level should the analysis start?

## ➤ **2. Check if the required MCs are already in your DB**

- Do you have an MC set with the right settings in your DB?
  - Analysis period
  - MC trigger type
  - View cone
  - MC extension
  
- If not: add them with `automagic insert_mc_production`

### ➤ **3. Check if the required Observation Data is already in your DB**

- Check if the data is filled!
- Check if there are new calibrated or superstar versions
- You can re-fill with `create_jobs add_data superstar_all --force_update=True`

## ➤ **4. Create the automagic analysis config file for the analysis**

- Make sure you create a new analysis config file and don't overwrite the old one
- Make sure your cuts fit to the data in the DB
- Change the path to the analysis config file in your user config file

## ➤ 5. Create the jobs for your analysis

- Create the jobs with `automagic create_jobs analysis_bottom_top`
- If no jobs are created, double check your analysis config file!
  - L3 trigger
  - Cleaning
  - DC values
  - Source name
  - Dates
  - `ignore_mars`

## ➤ **6. Have a quick look into the DB to check if everything's fine**

- Are there new jobs (state\_id 1)?
  - If not, does it make sense there are none?
- Does the number of new jobs make sense or should there be less/more?
- Checking the job tables is not necessary for the workflow but prevents larger problems...



## ➤ 7. Submit the jobs

- Start a tmux session and submit your jobs with `automagic submit all`
- Monitor your jobs with `watch -n2 condor_q`
- You can detach from the tmux session with `Ctrl+B` and then `d`
- You can list the active tmux sessions with `tmux ls`
  - Take care you're on the same login server again!
- You can re-enter the tmux session with `tmux attach -t session_number`

## ➤ 8. Check the success in the DB

- Check if the new jobs went to success (state\_id 5)
  - If not, check the exit\_code\_id in the DB and check the logs
  - Try to find out why the jobs failed
  - Make sure there's no systematic problem
  
- Rule of thumb:
  - At least 80% of the jobs should be successful!
  
- Sometimes automagic creates jobs that are expected to fail
  - Open issue

## ➤ 9. Create a tarball

- Create a tarball with `automagic get_fits --tarball_filename=your_file_name`
- You can copy the (relatively small) tarball somewhere else or do your gammapy analysis on PIC

## ➤ 10. Do your Gammapy analysis

- Tutorials can be found here: <https://docs.gammapy.org/dev/tutorials/>
- With the autoMAGIC tarballs you can make convenient cuts on weather, L3 rates, etc.