# From APEX to your desk: six years collecting data

F.M. Montenegro-Montes on behalf of APEX, C. de Breuck (ESO, Garching)

#### Abstract

Since its inauguration in 2005, APEX has gone trough 12 successful half-yearly observing periods. During these years a suite of forefront, in most cases experimental, instrumentation has been hosted to make best use of the outstanding climate conditions over the Chajnantor plateau. The remote location of APEX and the short staffing at the observatory makes the data flow from the telescope to your desk a not straightforward process which has historically involved quite some manual intervention. The old scheme of science data being copied into hard disks, and then shipped to the different partners is being replaced in 2012 by a new system, which rends this process more prompt and efficient. We are switching to an automated data transfer system through the network which makes use of the existing infrastructure connecting ESO Chile with ESO Garching. This new approach drastically reduces overhead times between observations being done and the PIs having access to their data, allowing PIs some kind of interaction during the observing run, and the possibility of quick data analysis and publication of results.

#### APEX across the years...









### Data production



From 0.3 to 1.5 TByte/year and increasing (but still... 1/100th of ALMA or VST+VISTA data rates)



Raw MBFITS, calibrated CLASS data, obslogs, quick reduction



Big producers: CHAMP+ (multi-beam) and 24-h observations



Higher rates foreseen with future instrumentation



## Archiving procedures

PAST





Only one/two shipments per run

Manual intervention both at APEX and ESO

Travel overhead too long, several trips in the process

PI gets the data after 1-4 months after observations





#### **NEAR FUTURE**







One shipment every 24 hrs.

Automated transfer: minimum manual intervention.

Fast internet connection Chile - Germany (EVALSO, GEANT2). PI gets the data in  $\sim$  2 days in his desk. Propriety period starts.

PI can take decisions before the observing run is finished.

Possibility to get quick results and publication!

Higher possibility to get more time...

Community also gets Swedish and ESO data

earlier: data are publicly available after 1 year.



Net

Adknowledgements: The APEX Science Operations Group takes care about sanity check, quick reduction and backup of your data. At the ESO side, several departments are involved in the APEX data archiving: Archive Department, Archive Operations Group, Database Contents Management Group, Data Flow System Group, Operations Technical Support Group, and ESO/APEX User Support department. Thanks to ESO-Vitacura IT department for their support and to the Data Handling Administrators Group in Paranal for advice. Special thanks to our APEX software engineers for all their efforts!