

# The International DORIS Service

## Current achievements and future challenges

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# OUTLINE

- Introduction
- IDS Achievements
- Things that could be improved
- Possible future evolutions of IDS
- Conclusions

# Introduction

- Non-scientific presentation
- Only personal views
- Long-term perspectives
- Providing more questions than answers

# IDS Achievements

## What is working fine!

- Context (strong points)
  - Well-distributed and stable DORIS network
  - Long data history
  - Current and future DORIS satellites (system is secured)
- Data centers
  - Fully operational
- Analysis Centers
  - Constant improvement in precision
  - Continuous detection of small data processing issues
  - Regular submissions (4 per year)
- Combination Center
  - Constant improvement in precision
  - Operational combinations

# Things that could be improved

- Users
  - Currently:
    - internal users (ACs)
    - combination for ITRF (IERS)
  - Other possible users:
    - Ionospheric groups (timely delivery of data is critical – near real time)
    - Altimetry (POD combinations or validations)
    - Geophysicists (in conjunction with GNSS data)
      - Long-term
      - Transient signal (volcanos, Earthquakes)
      - seasonal
    - Climatology
- Long-term directions
  - Currently no long-term planning (but IDS retreat in preparation)

# Finding new users (ionospheric groups)

- IDS Working Group recently created to analyze this problem
  - Technical issues : timely delivery of DORIS/RINEX data – near-realtime data processing
  - Data processing issues: Combination with GNSS data
  - Finding new cooperations, outreach

# Finding new users (altimetry/POD)

- Political issues: finding the proper product
  - Best POD solution is multi-technique (DORIS+GPS+Laser)
  - DORIS-only Combination?
    - is it always better? (accuracy/precision),
    - validation (is it really needed?),
    - specific studies (non-operational tasks?)
  - POD groups already financed for this activity (there is no real user request as such)
- Testing solutions on a limited data set
- Operational activities

# Finding new users (geophysicists)

- New and better IDS results available on IDS Web site (time series of coordinates, Plottool, easy to use for non-DORIS users)
- Several cooperations were initiated but difficulties to continue on the long-term
- GNSS results are easier to use and much more precise (especially for horizontal results). At least, only GPS+DORIS studies are of real interest and DORIS contribution is limited



# Finding new users (climatology)

- Strong point:
  - stable and homogeneous DORIS network
  - Complete reprocessing of data is easily available
- DORIS Zenith total delays series already available but not really considered by others
- Weak pointst:
  - DORIS contribution is very limited
  - Validation/reliability is an important as precision for these users. Adding a new data type usually requires extensive tests

# Discussion

- Is there a need for a long-term plan (IDS retreat in preparation)?
- Possible naive questions to be answered during this retreat:
  - What is IDS and who are our users (current definition)?
  - Current achievements and limitations?
  - What could IDS be in 5-10 years (data driven, user driven), list of possible extreme scenarios?
  - What do we want IDS to be in 5-10 years?
  - How do we go from here to there? (intermediate steps and goals)

# CONCLUSIONS

- DORIS system is working fine and is secured for the following years (satellites, ground network)
- IDS achievements
  - Data collection
  - Diversity and operationality of ACs
  - Efficient Combination Center
- Possible evolutions of IDS?
  - Status quo: internal users + ITRF every 5 years
  - Data-oriented (generation of ionospheric products in conjunction with other data by others)
  - Users-driven (ionosphere, geophysicists, altimetry/orbits, climatology, others). Need to find the proper products and user community