

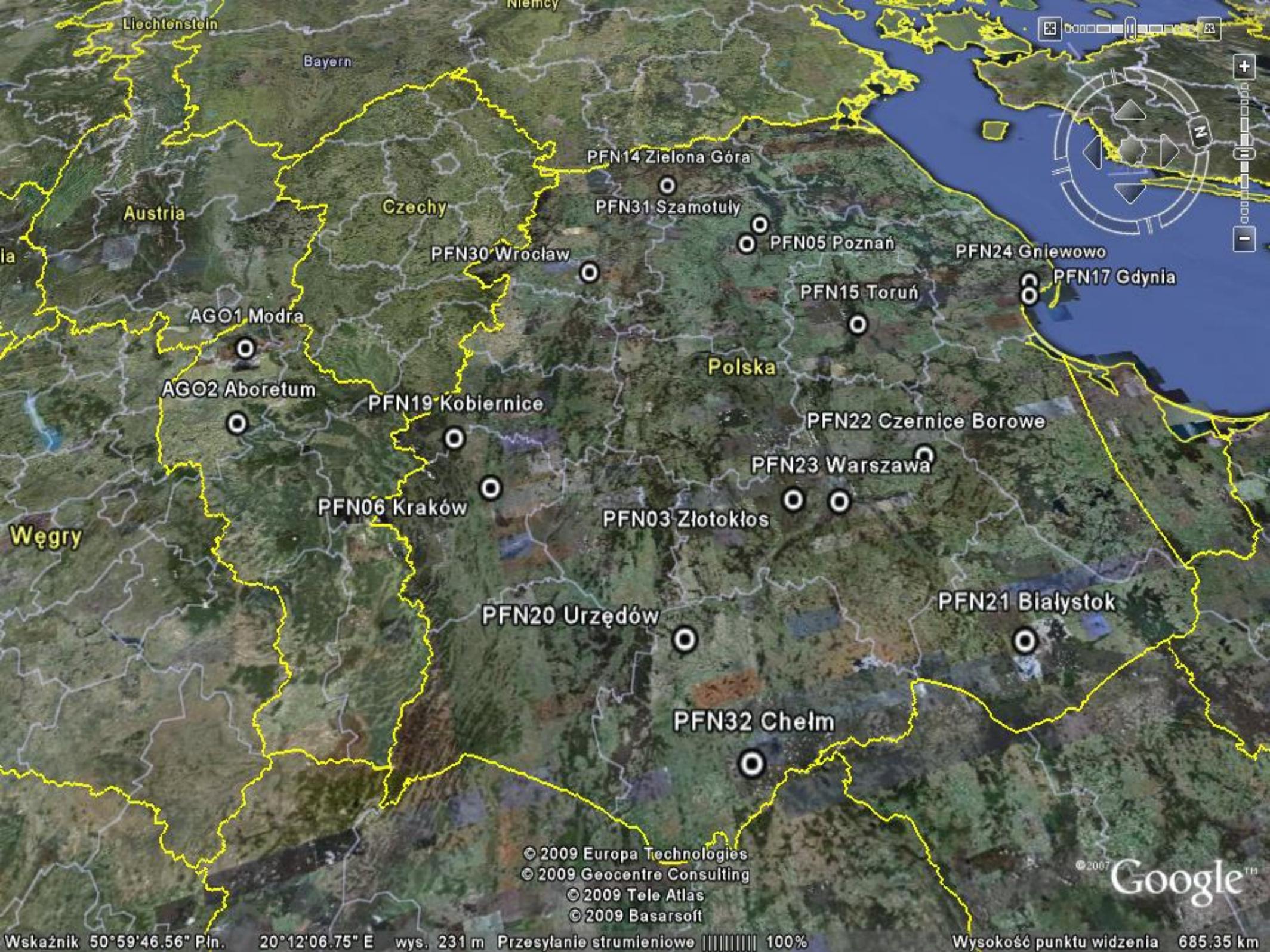
Polish Fireball Network

Mariusz Wiśniewski



Pracownia Komet i Meteorów

www.pkim.org



Liechtenstein

Bayern

Austria

Czechy

PFN14 Zielona Góra

PFN31 Szamotuly

PFN30 Wrocław

PFN05 Poznań

PFN24 Gniewowo

PFN17 Gdynia

AGO1 Modra

PFN15 Toruń

AGO2 Aboretum

PFN19 Kobiernice

Polska

PFN22 Czernice Borowe

PFN23 Warszawa

PFN06 Kraków

PFN03 Złotokłos

Węgry

PFN21 Białystok

PFN20 Urzędów

PFN32 Chelm

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Wskaźnik 50°59'46.56" Płn. 20°12'06.75" E wys. 231 m Przesyłanie strumieniowe ||||| 100%

Wysokość punktu widzenia 685.35 km

PFN Status

- 16 working stations (32 cameras)
- temporarily not working (9 cameras)



PFN Status

- Photographic (digital) stations:
- 1 working
 - Gniewowo (Canon + Sigma 10mm)
- 2 under construction

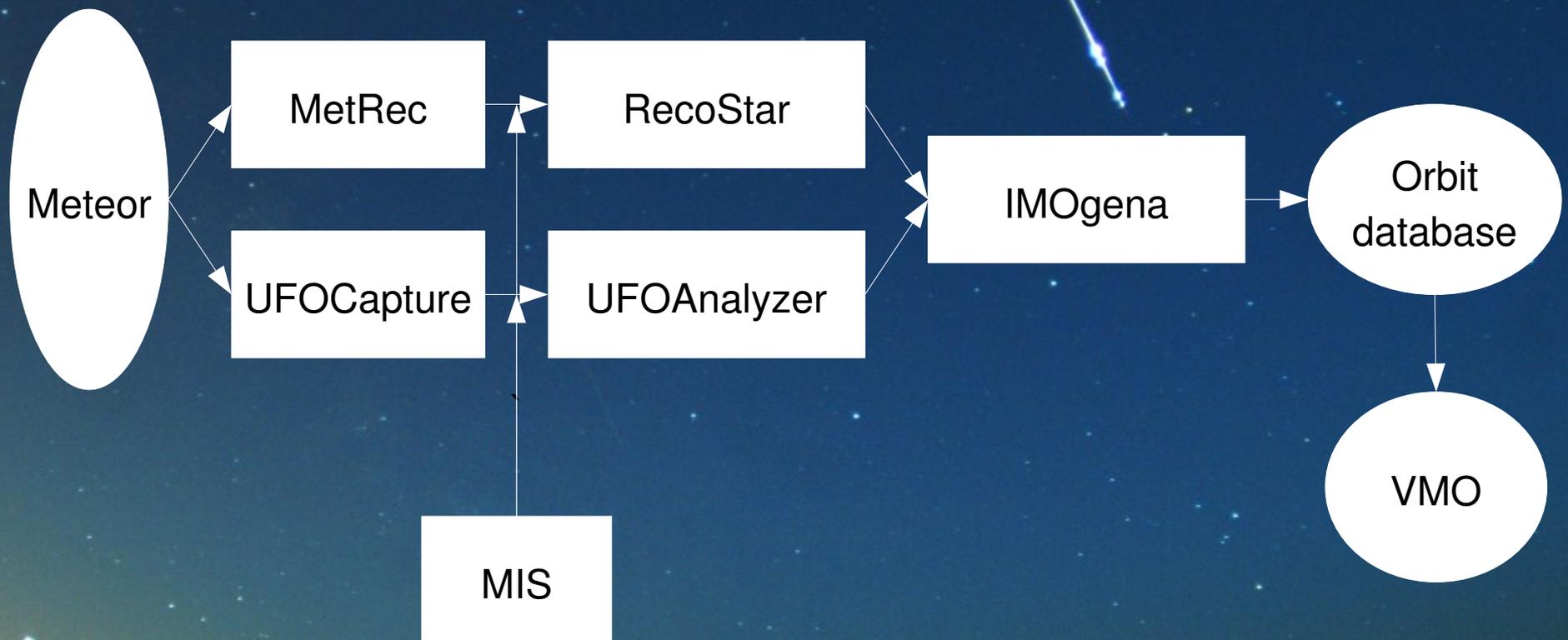


PFN Status

- Video for faint meteors and fireballs
- Photo for fireballs and super-fireballs
- Hybrid network



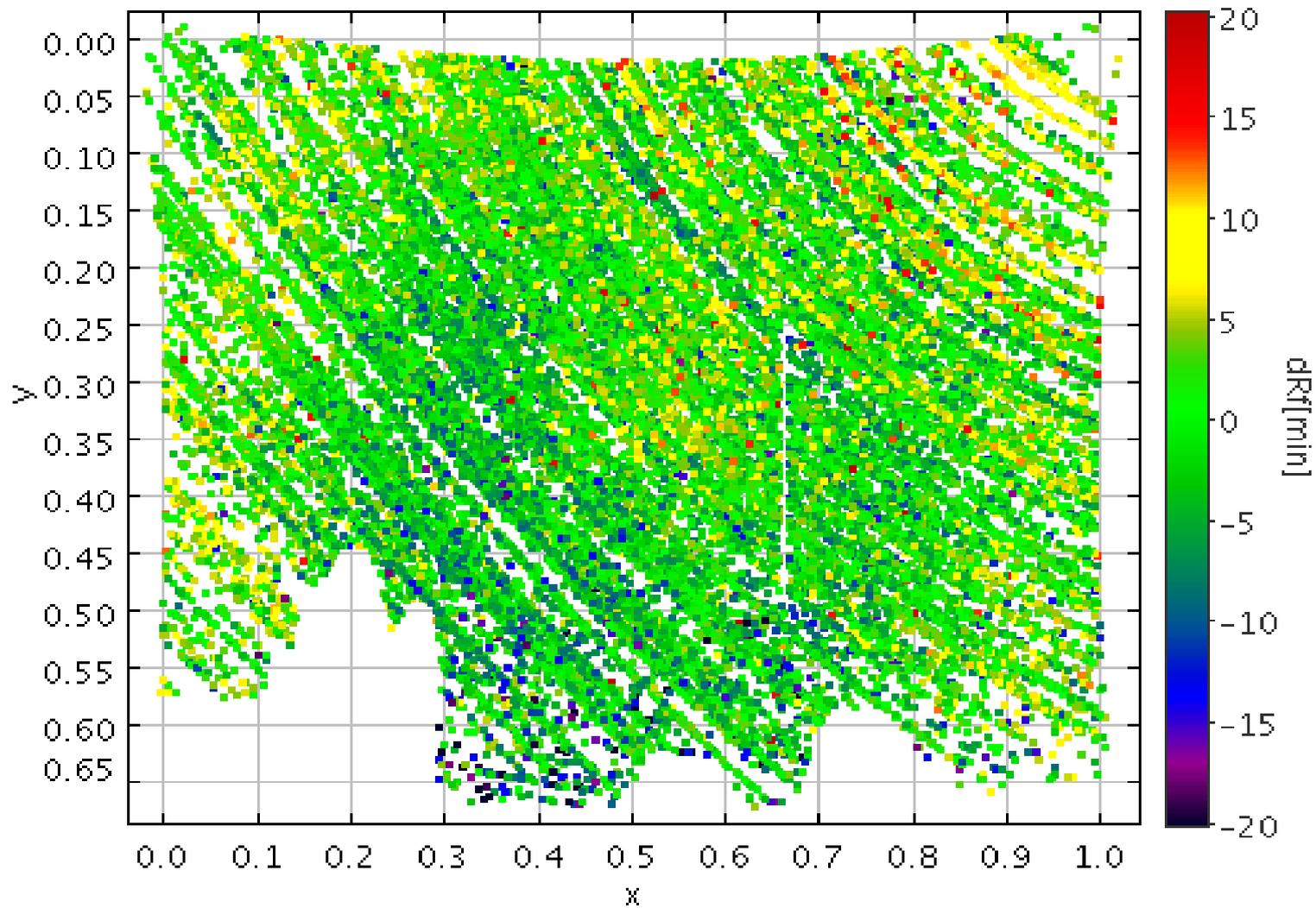
Reduction pipeline



RecoStar package

- RecoMean, RecoFind – image processing
- RecoStar – star identification
- RecoGrid – grid estimation and calculation of meteor positions
- RecoTime – correction of observation time
- RecoMore – star identification (with known grid)
- RecoBase – create postdat output for Radiant

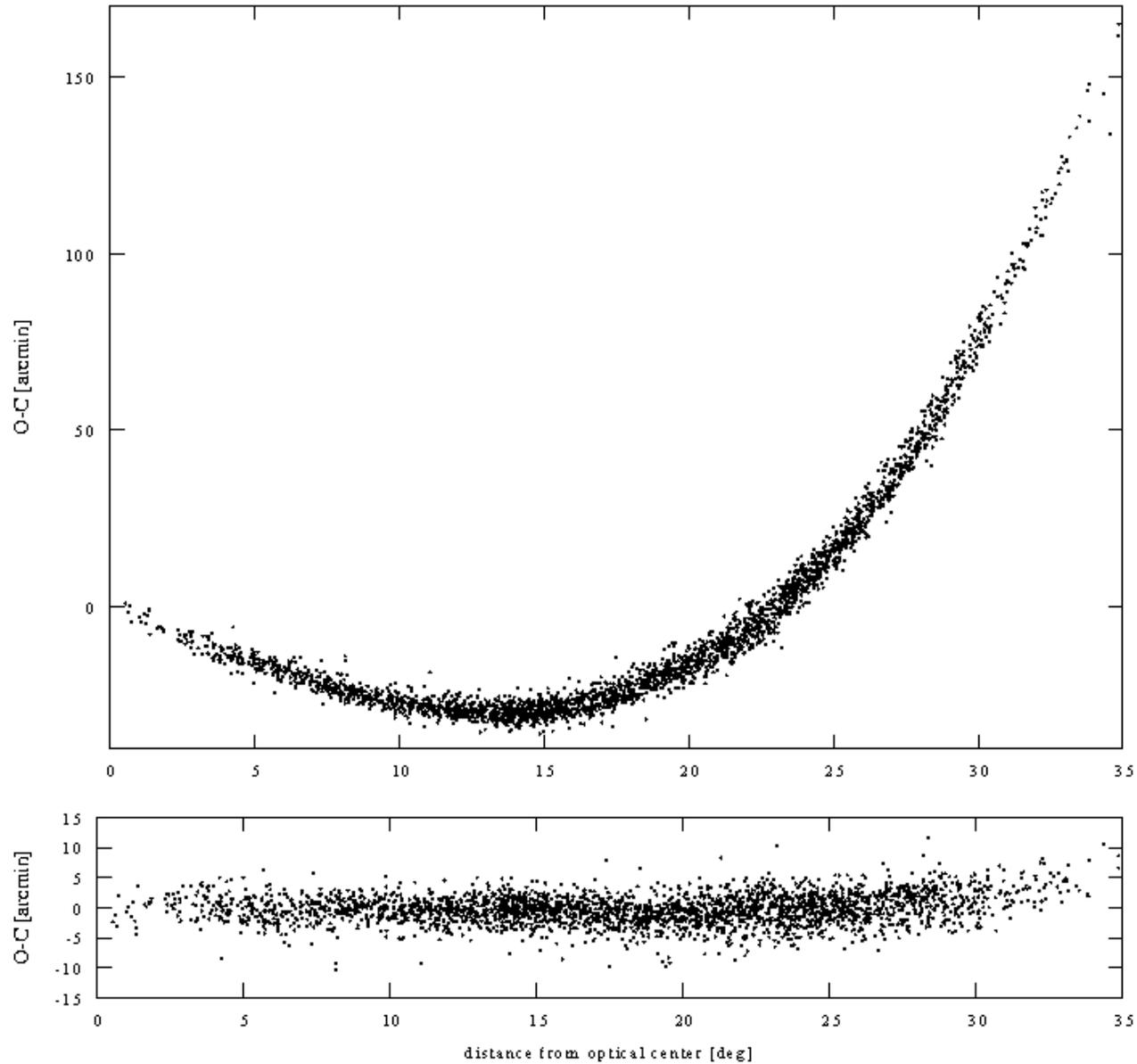
~36k of
reference
stars



RecoGrid

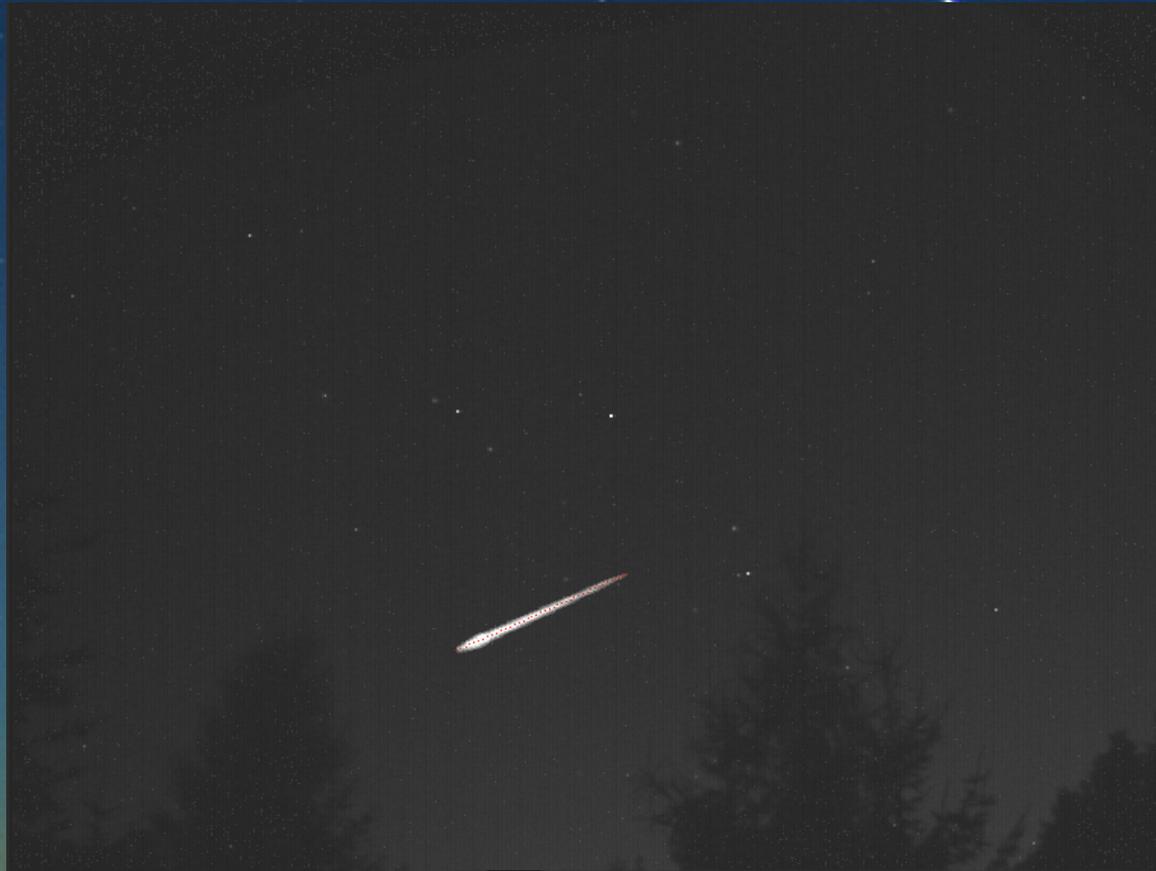
- How it works:
 - determination of coordinates of optical center based on data near optical center
 - elimination of bad recognitions
 - First fit of Turner transform for whole image
 - Radial correction
 - Second fit of Turner transform for corrected data
 - Calculation of coordinates for all meteors

RecoGrid



MIS

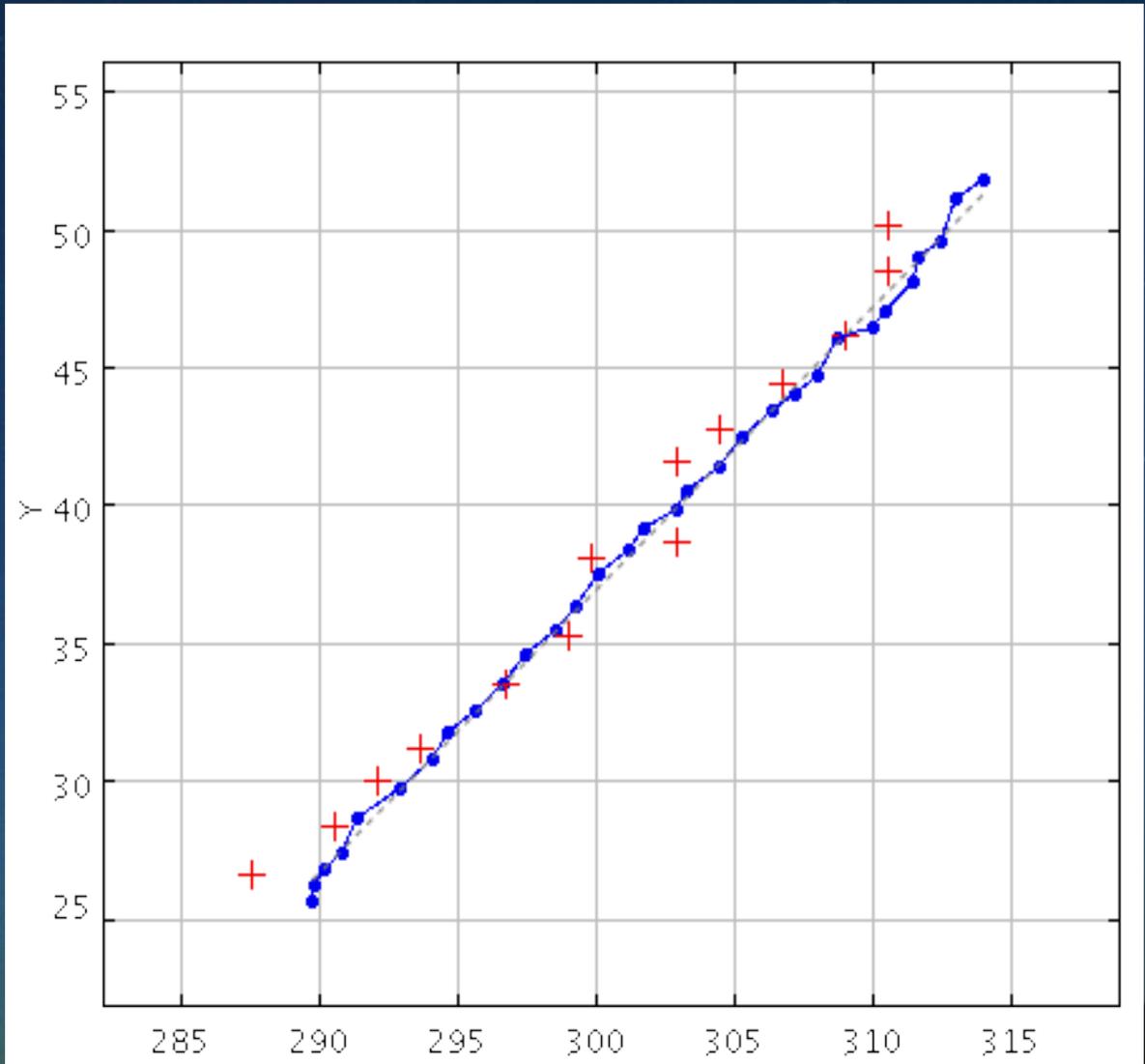
- Meteor Identification Software



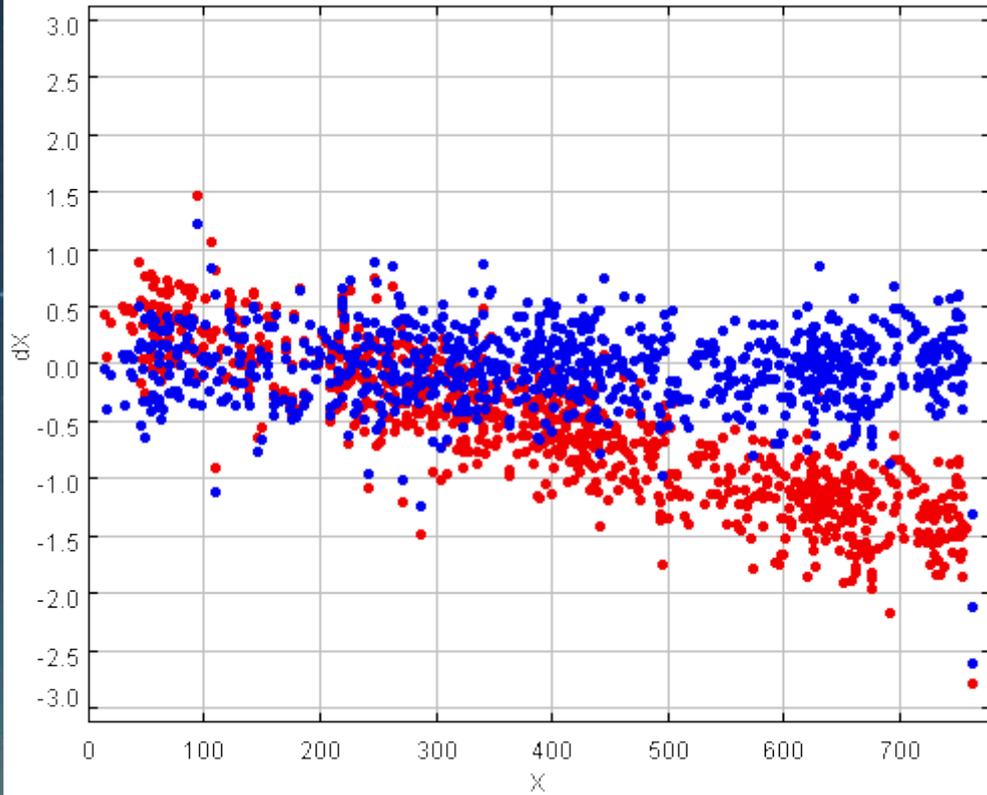
MetRec vs MIS



PFN05 Poznań

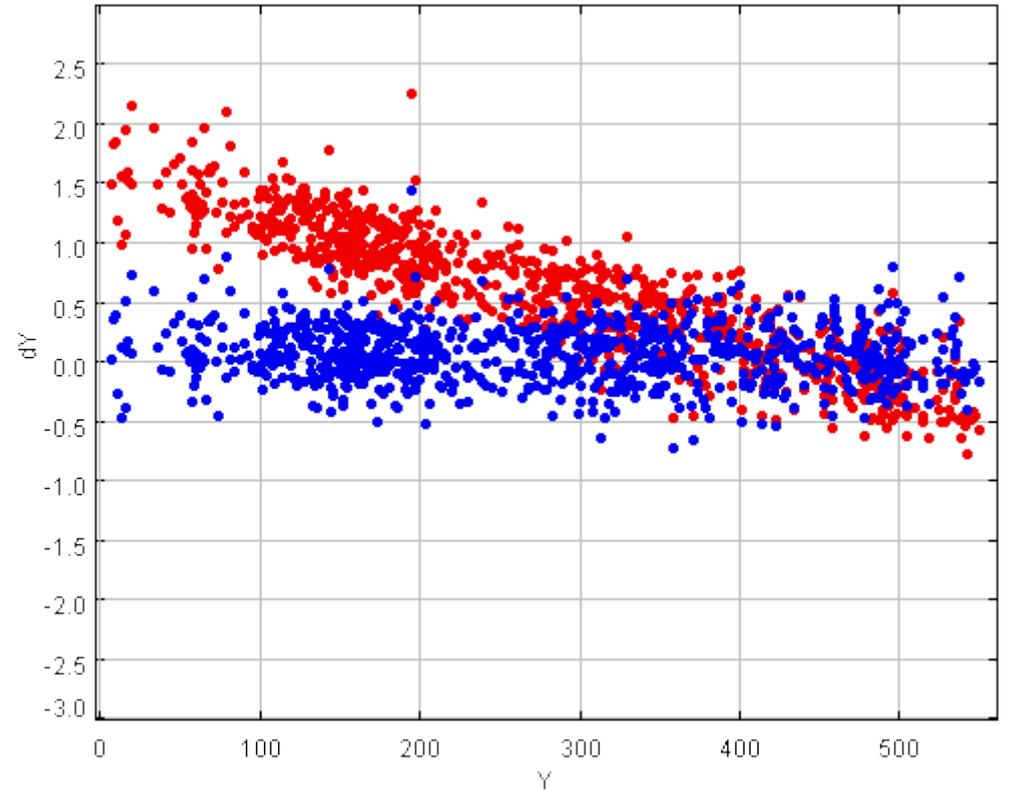


MetRec vs MIS



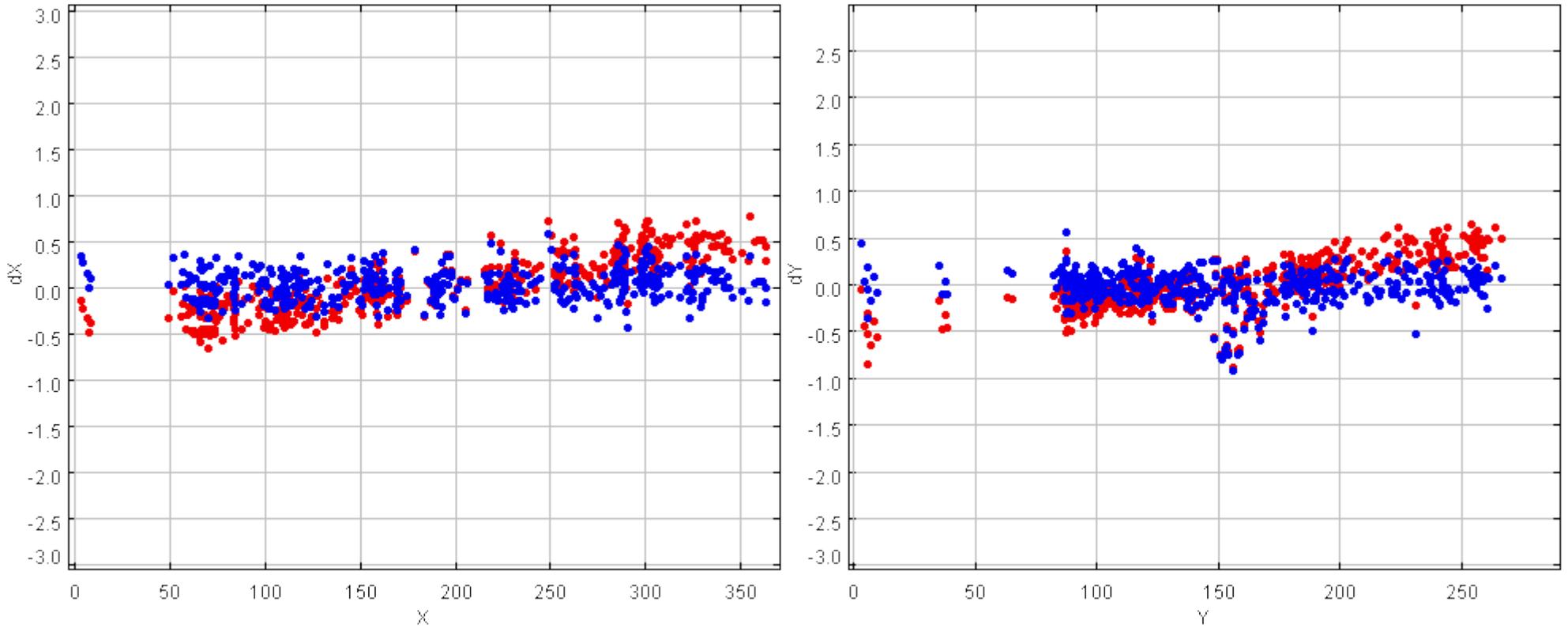
MetRec 4.1 (max)

$$X=x*770-0.5$$



$$Y=y*578-1.5$$

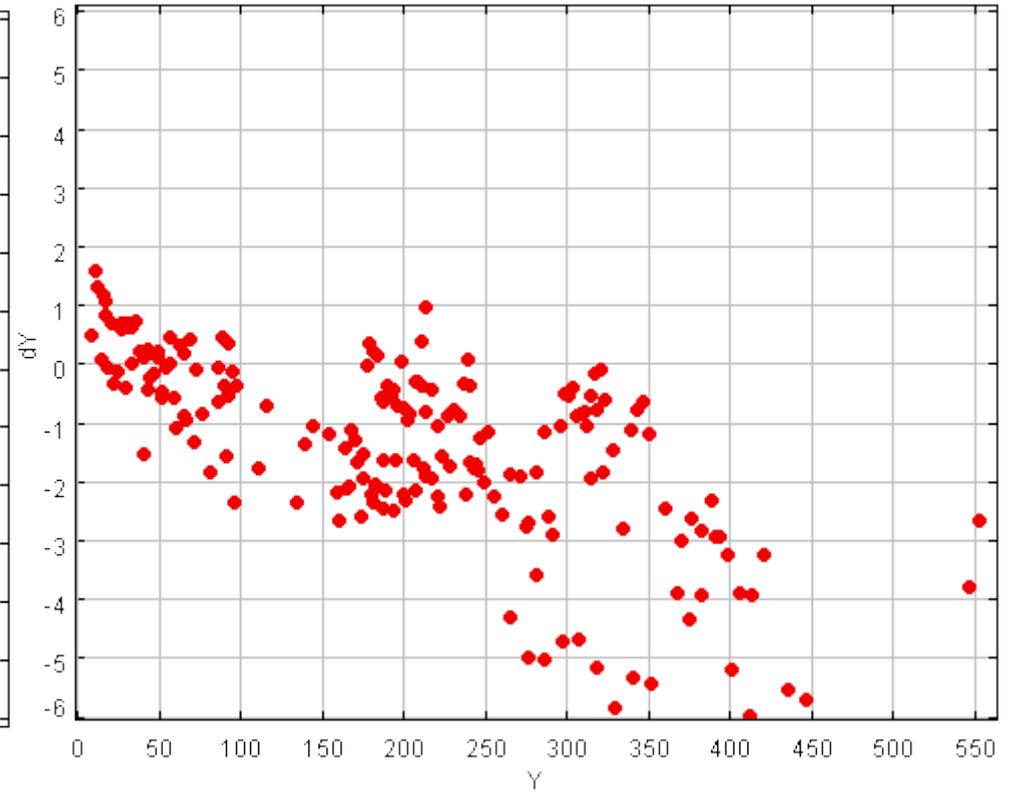
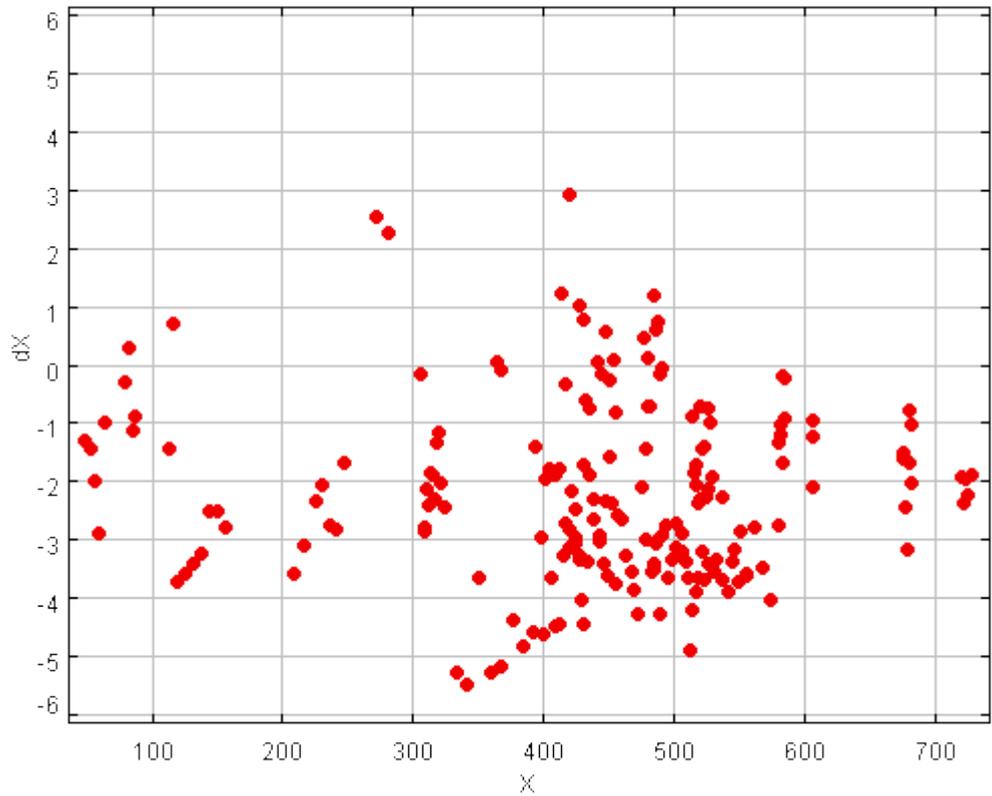
MetRec vs MIS



MetRec 4.0 (full)

$$X=x*383+0.5 \quad Y=y*287+0.5$$

MetRec vs MIS



???

MetRec 5.0 (max)