

MAINTENANCE OF THE EPN ETRS89 COORDINATES AND VELOCITIES

- UPDATE -

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EUREF TWG 2009 SUMMER MEETING,
FLORENCE 26 MAY 2009

TARGET: UP-TO-DATE AND STABLE CRD&VEL PRODUCT

HOW?

- WEEKLY COMBINED (AC)
 - COORDINATE VARIABILITY
- ITRF DENSIFICATION
 - RARE UPDATES
- 'CLASSIC' CUMULATIVE SOLUTIONS
 - CRD BIAS FOR 'YOUNG' STATIONS (CRD MAPPING)
- 'CLASSED' CUMULATIVE SOLUTION
 - + STABLE COORDINATES
 - + SAME QUALITY AS THE ITRF DENSIFICATION
 - + FREQUENT UPDATES
 - DIFFERENT EPOCHS FOR CLASS_A & B

EPN SITE CATEGORIZATION

STATIONS WITH SUFFICIENT LENGTH OF OBSERVATIONS AND HAVING HIGH QUALITY VELOCITIES SHOULD BE DISTINGUISHED FROM 'YOUNGER' SITES.

EUREF ANALOGY:

CLASS_A: $\ll 1$ CM ACCURACY ETRS89 CRD AND
 $\ll 1$ MM/YEAR VEL AT **ANY** EPOCH

CLASS_B: $\ll 1$ CM ACCURACY ETRS89 CRD (~~VEL~~)
AT **EPOCH OF MINIMUM VARIANCE**

CATEGORIZATION CRITERIA

UPDATED AND EXTENDED

CLASS_A STATION:

- MINIMUM OBSERVATION LENGTH: 1 YEAR
- LAST SOLUTION NOT OLDER THAN 2 YEARS
- VELOCITY 'REPEATABILITY' $< 0.5 \text{ MM/YEAR}$ OVER THE LAST 10 SOLUTIONS (45 WEEKS)
- THE UNCERTAINTY OF THE LAST VELOCITY SOLUTION IS $< 0.5 \text{ MM/YEAR}$

CATEGORIZATION IN THE PRODUCTS

EPN_CWwww.SNX - EPN cumulative SINEX



includes all weekly solutions up to GPS week **www**

INTERNALLY

EPN_A_ITRF20yy_CWwww.SSC / SNX CRD & VEL

EPN_B_ITRF20yy_CWwww.SSC no SNX ! CRD no VEL !

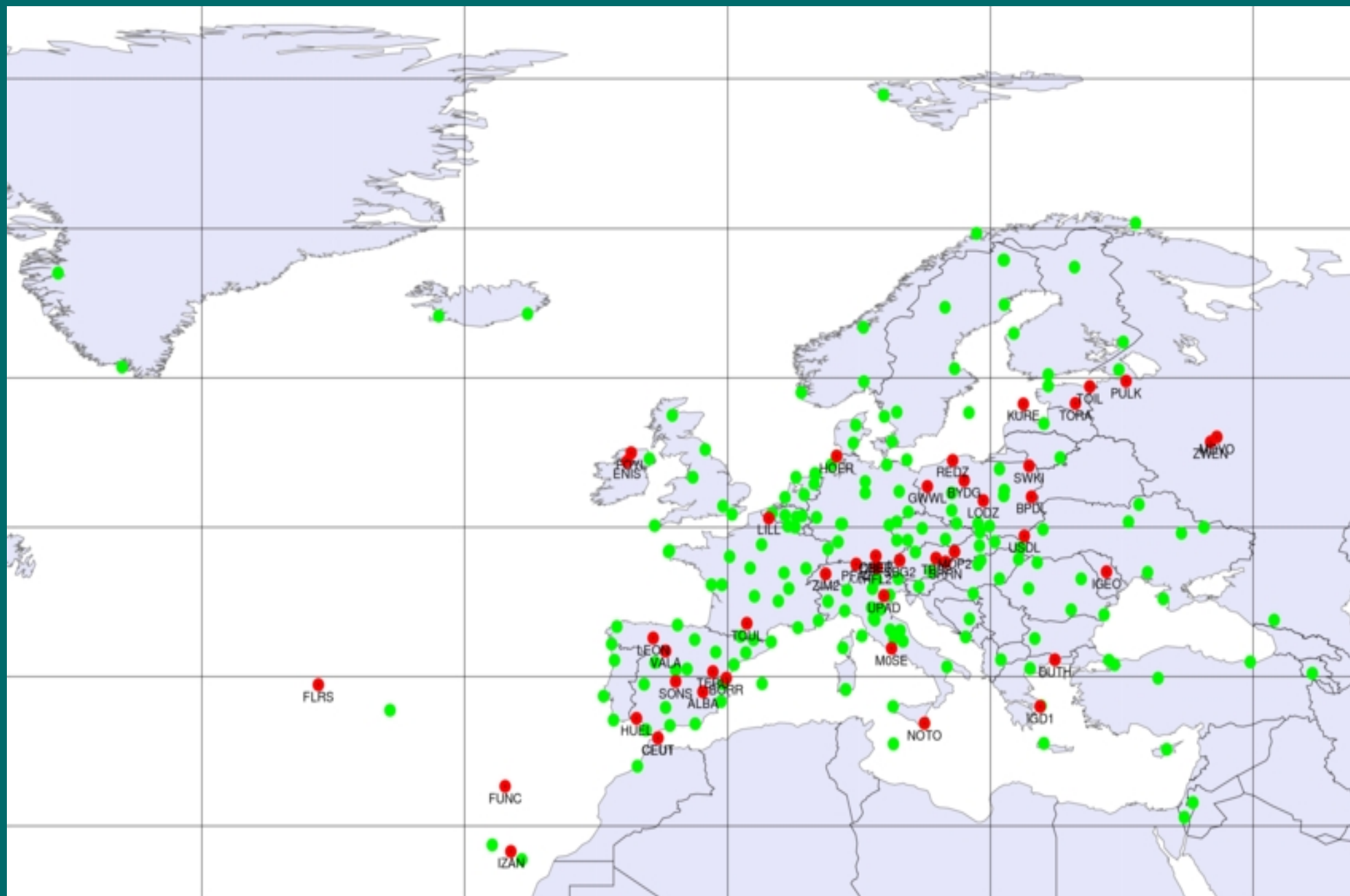
EPN_A_ETRF2000_CWwww.SSC / SNX CRD & VEL

EPN_B_ETRF2000_CWwww.SSC no SNX ! CRD no VEL !

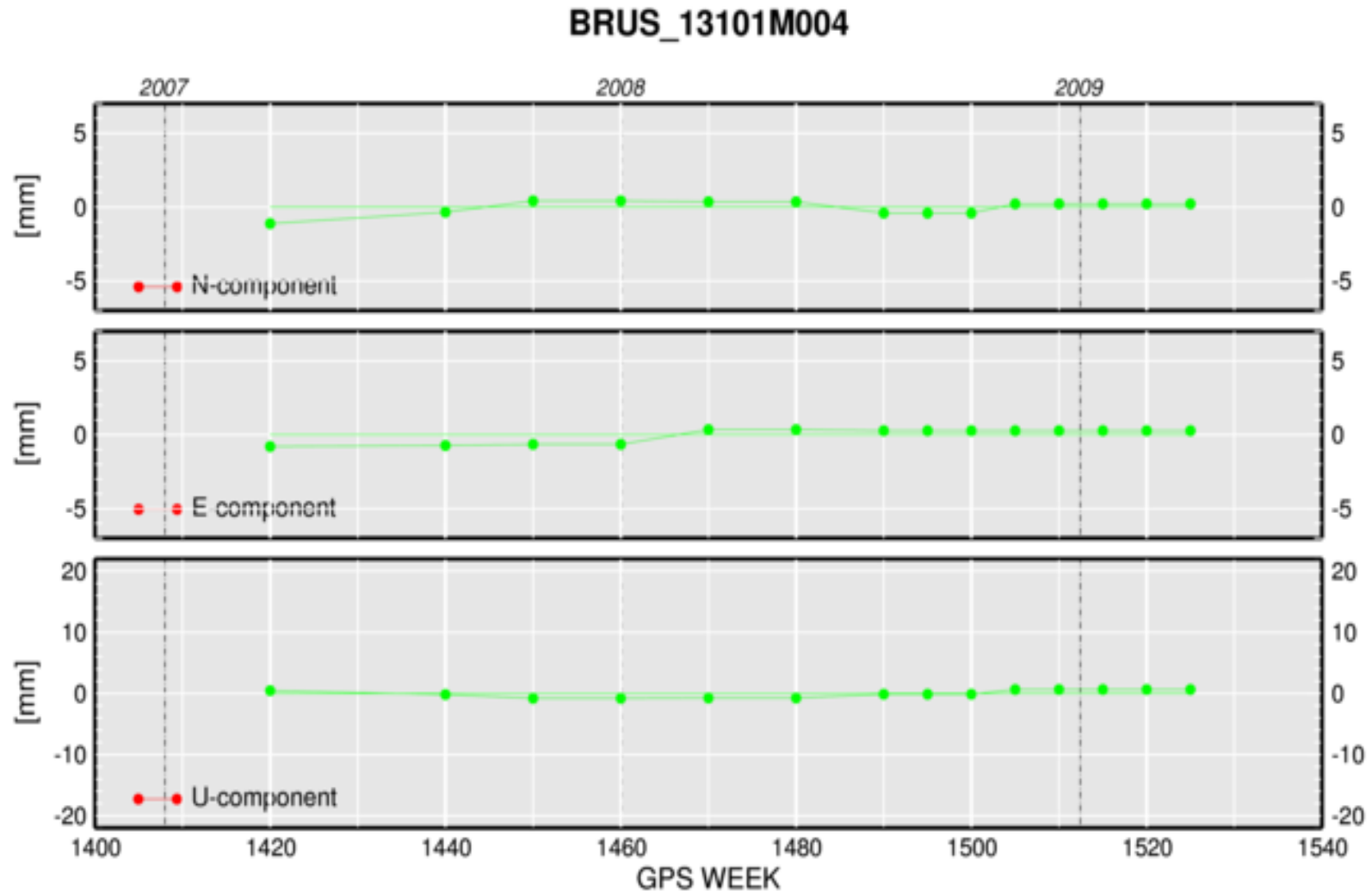
A - pre-defined single epoch (2005.0)

B - the actual epoch of minimal variance for each station

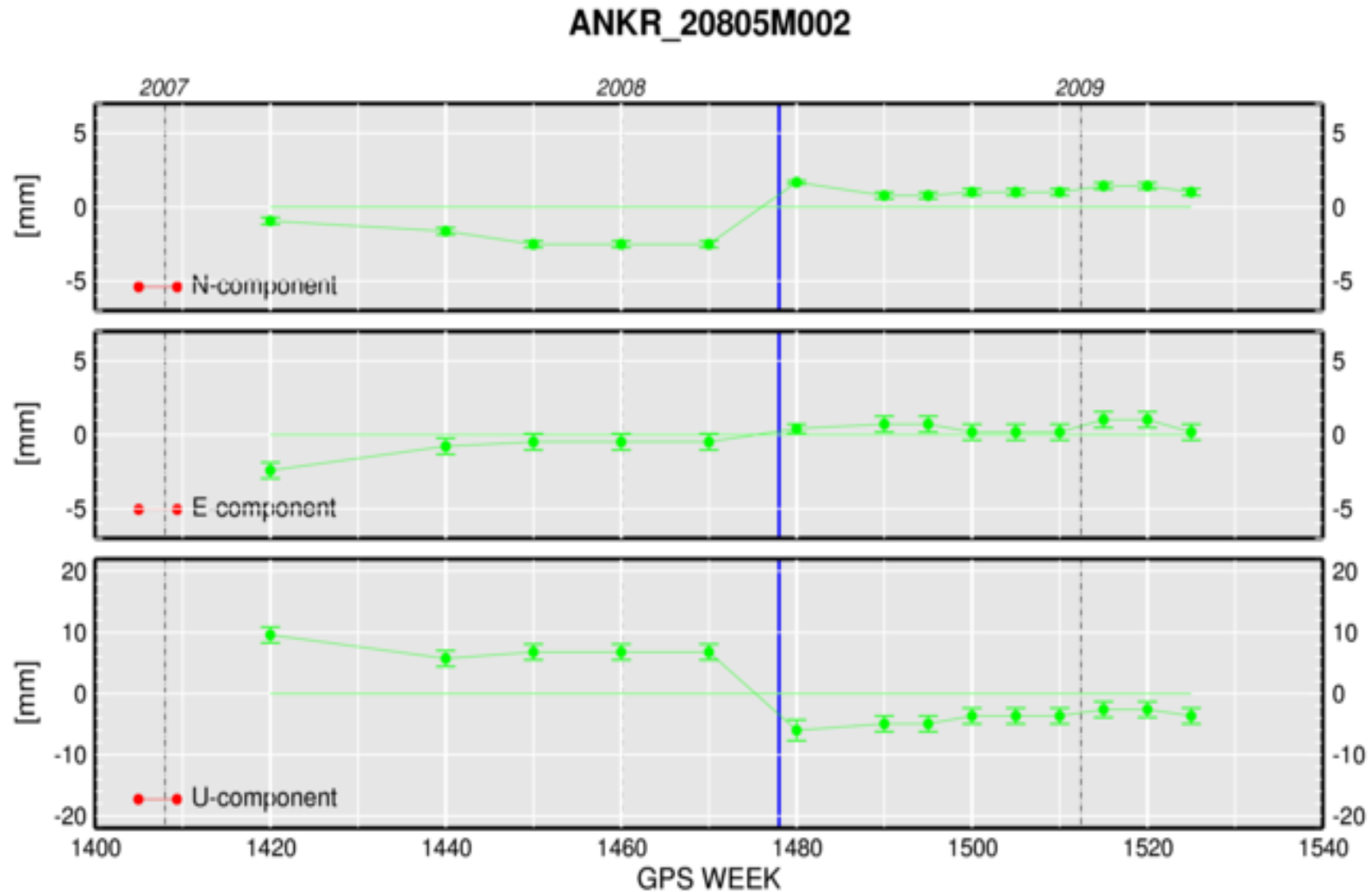
EPN CLASSES - C1525



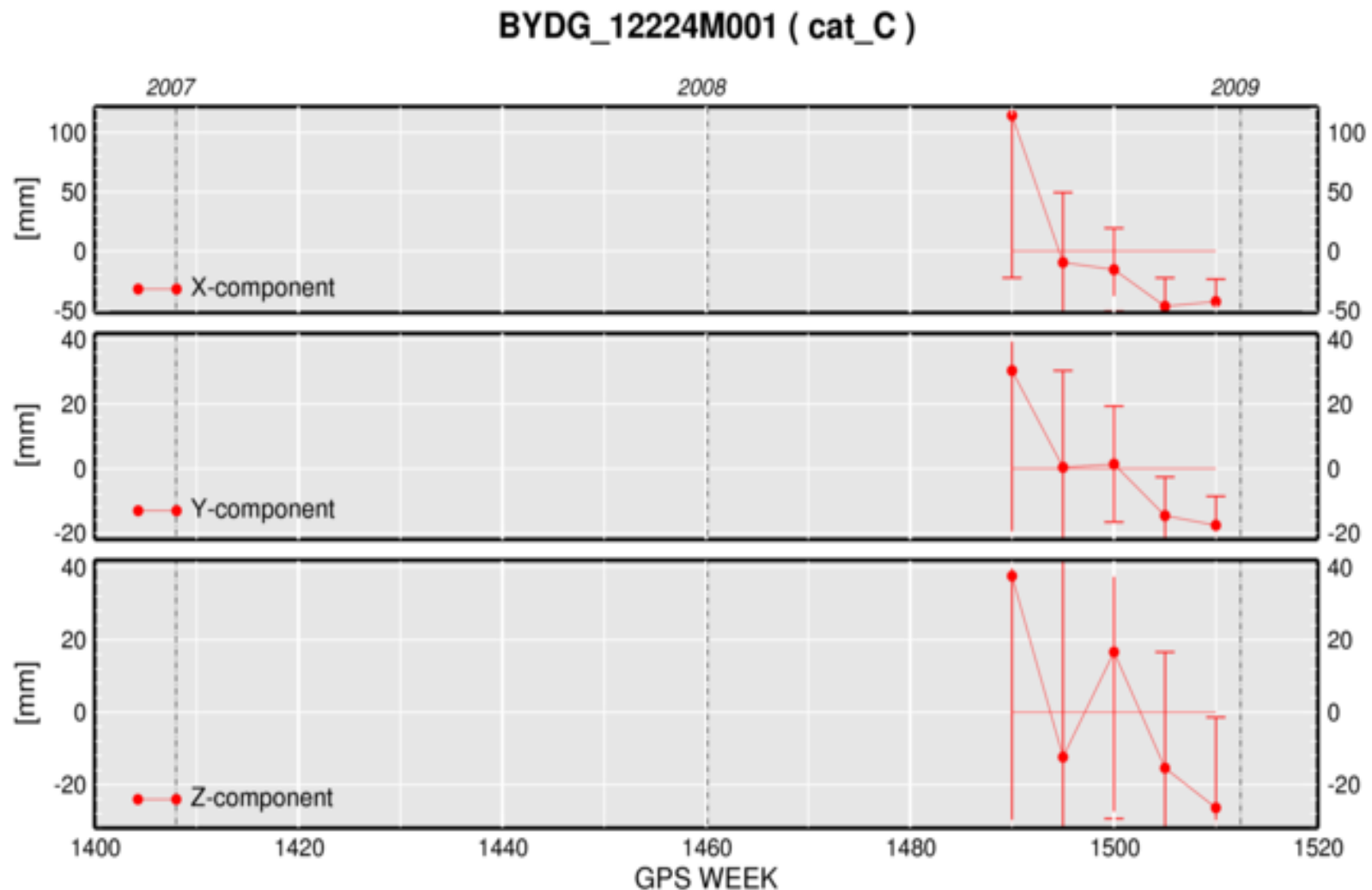
'OLD' STATION: BRUS



OFFSET: ANKR



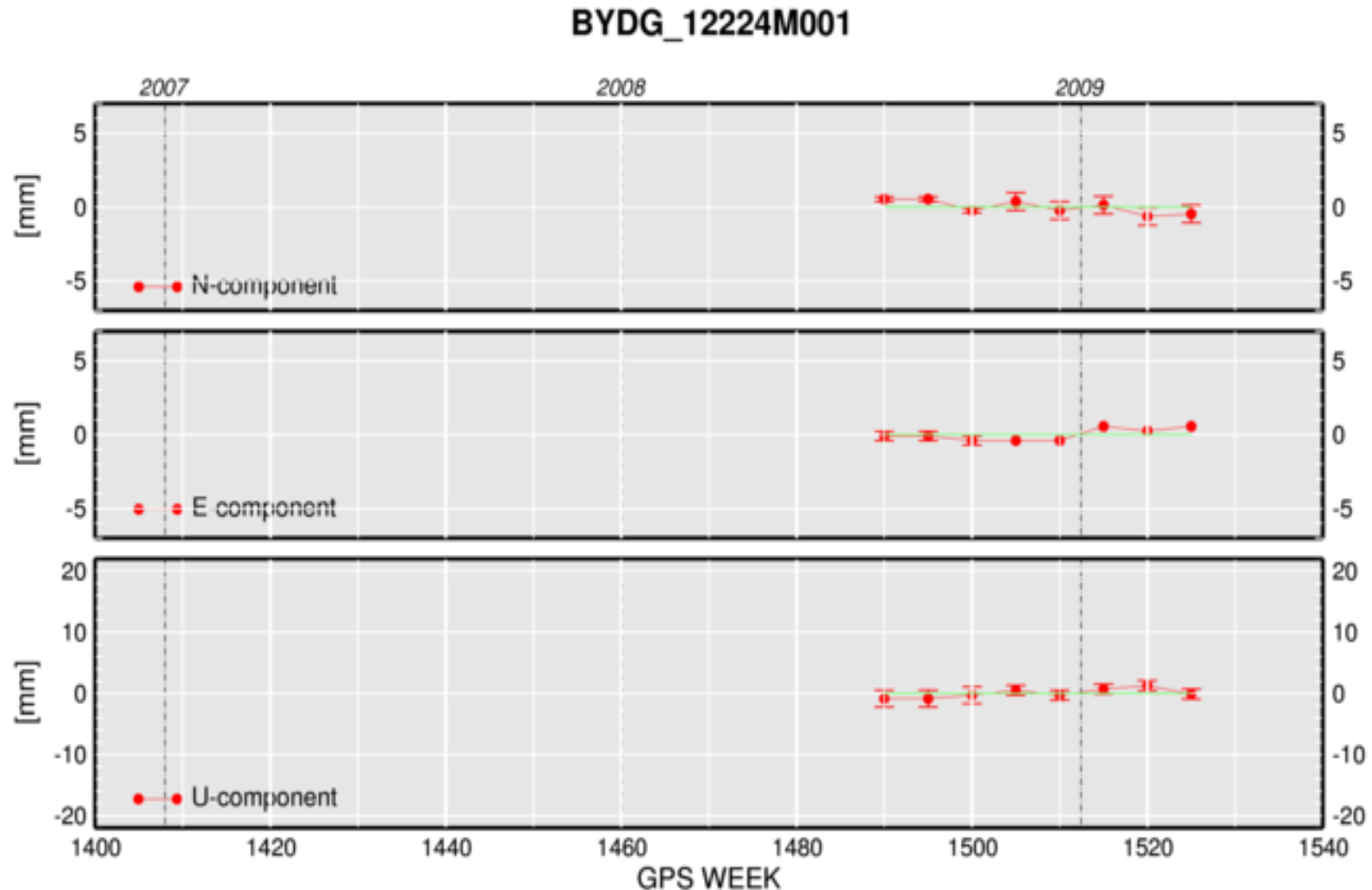
'VERY YOUNG' STATION: BYDG



EPN cumulative solutions by AK

Coordinate repeatabilities

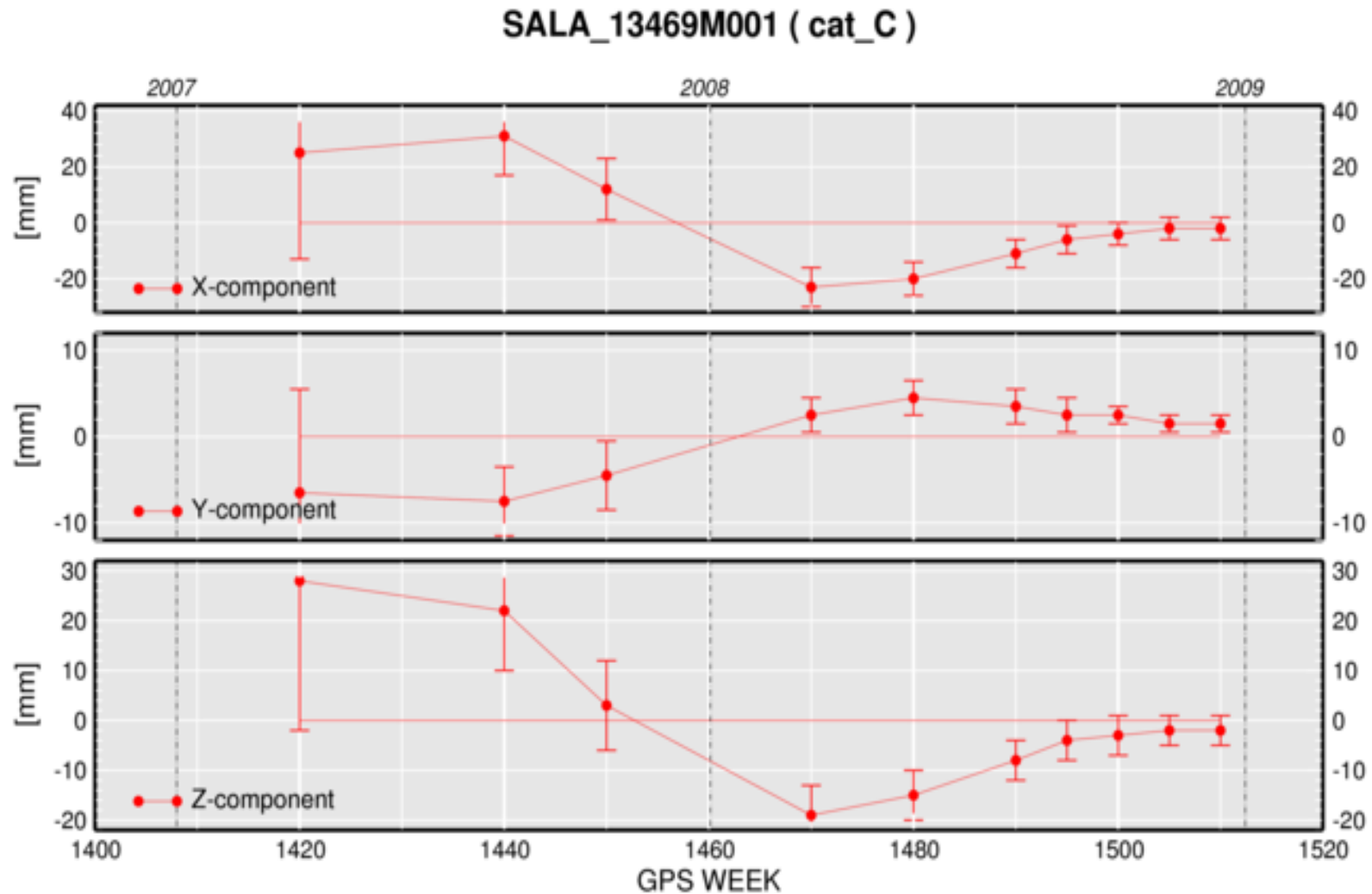
'VERY YOUNG' STATION: BYDG



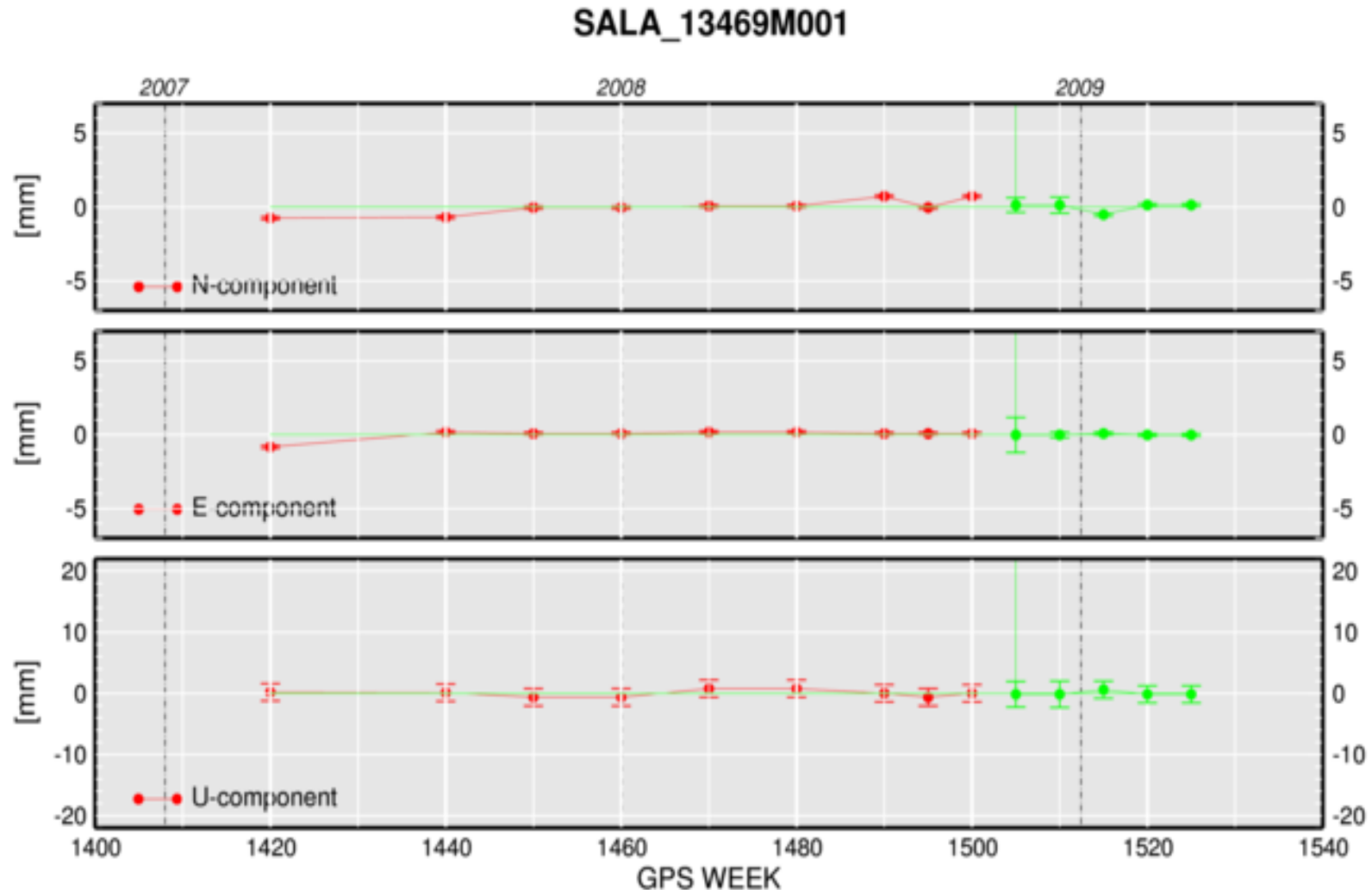
EPN cumulative solutions by AK

Coordinate repeatabilities

'YOUNG' STATION: SALA



'YOUNG' STATION: SALA



EPN ETRS89 MAINTENANCE

- THE MAINTENANCE CUMULATIVE SOLUTION IS COMPUTED IN EACH ? FIVE ? WEEKS (C1525)
- THE COORDINATES BOTH IN CLASS_A & B ARE STABLE ON THE MM-LEVEL
- CLASS_A & B **SNX** AND **SSC** SOLUTIONS ARE PUBLISHED IN ITRF2005 AND ETRF2000
- **CLASS_A STATIONS ARE PROMOTED TO USE FOR EUREF DENSIFICATION**
- NAMING CONVENTION:
 - INTERNAL EPN_A/B_ETRF2000_**CWWWW**
 - PUBLICATION EPN_A/B_ETRF2000
- THE 'HISTORICAL' SOLUTIONS ARE ARCHIVED