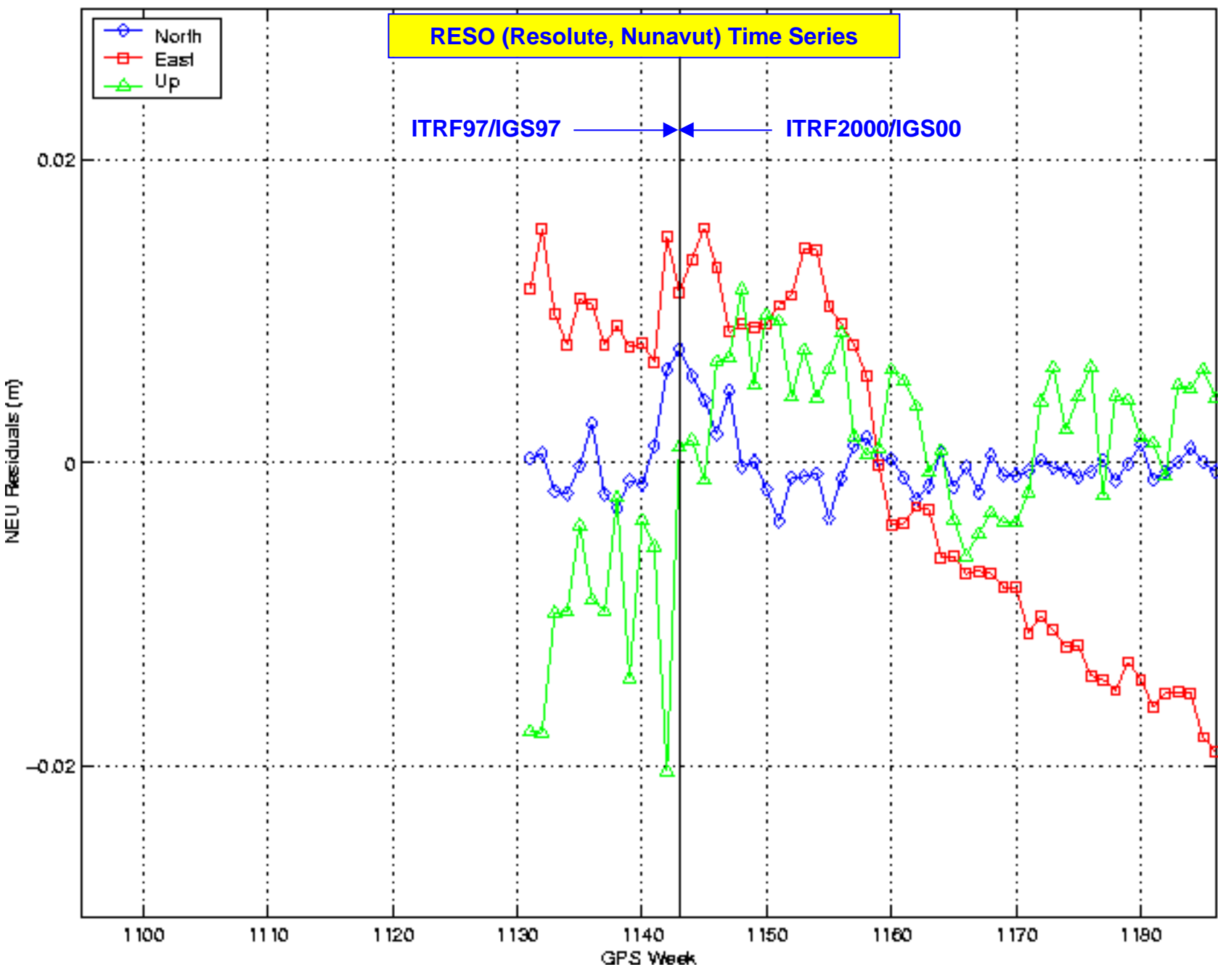
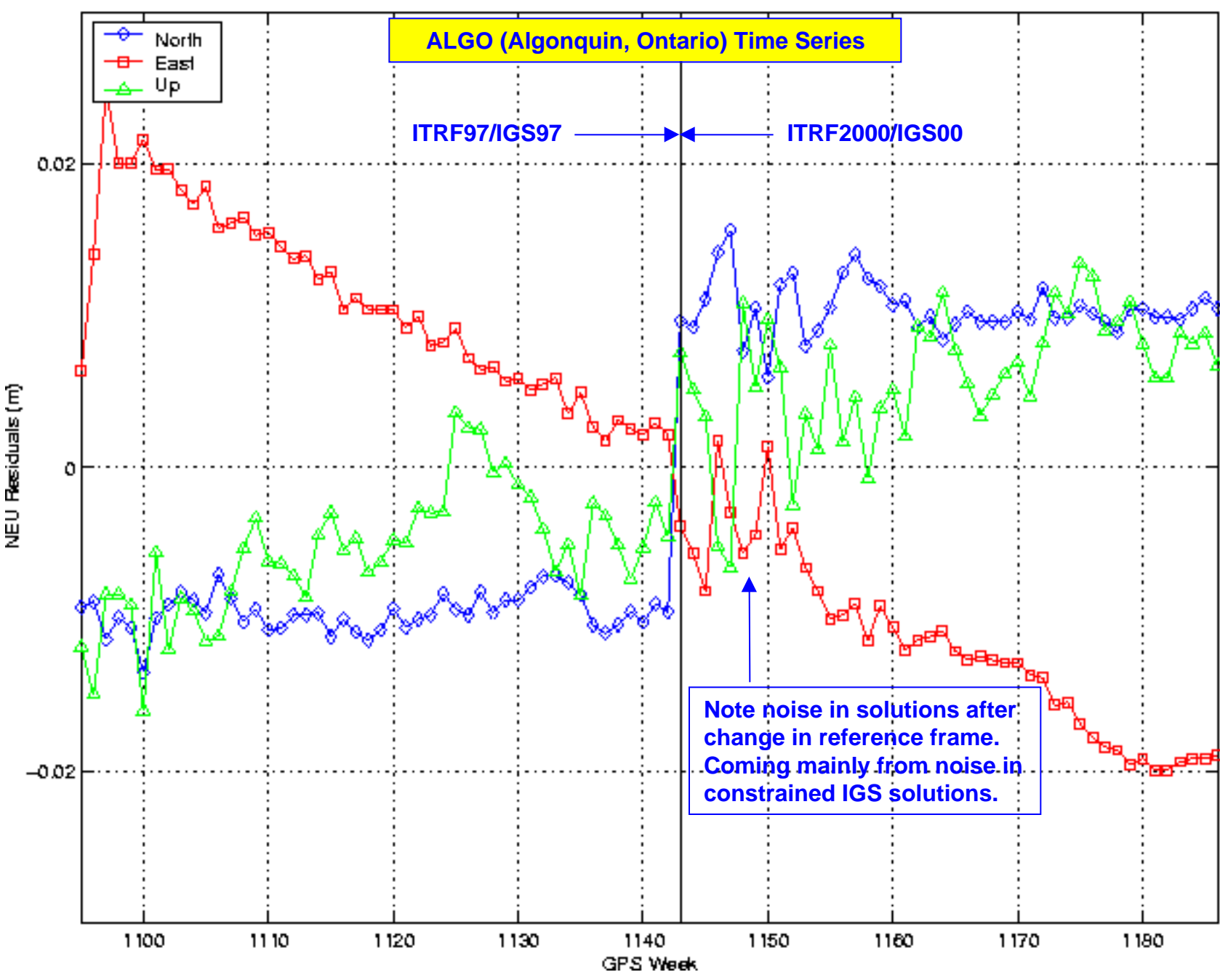
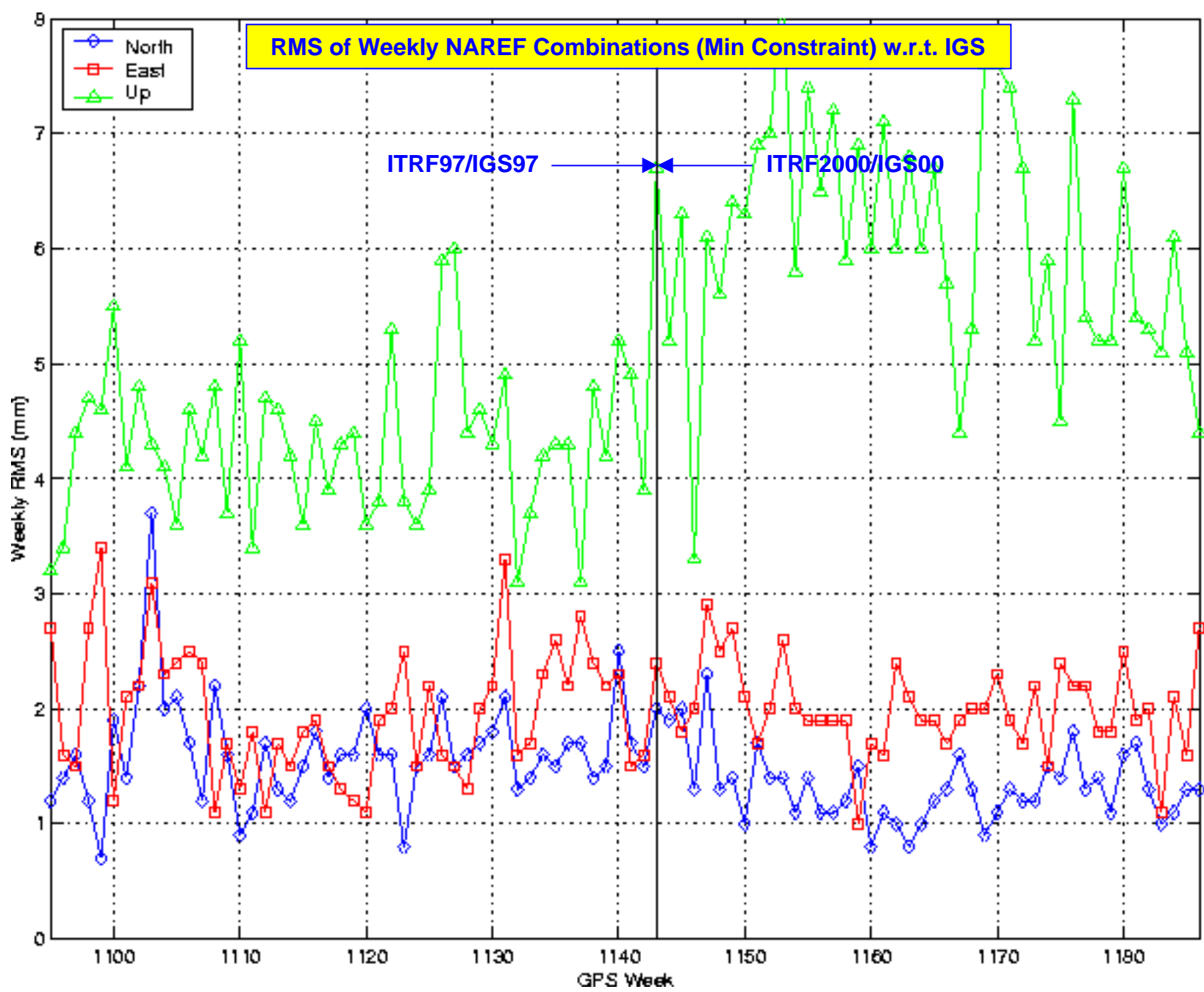


COMBINATION PROCEDURE

- Using SINEX Software v1.0 by R. Ferland (used for official IGS global combinations)
- A priori datum constraints removed from each regional solution
- Each regional solution aligned to IGS weekly solution (3 translations, 3 rotations & scale change)
- Residuals tested for outliers (removed)
- Covariance matrix of each regional solution scaled by WRMS of residuals
- All (scaled) regional solutions combined (summation of normals)
- Combined solution aligned to IGS weekly solution (3 translations, 3 rotations & scale change)
- Covariance matrix for combined solution scaled by WRMS of residuals
- Residuals tested for outliers (removed)
- 1 IGS reference frame station (DRAO) constrained to IGS00 (min constraint)
- Generated SINEX file for combined solution (NAREF solution)

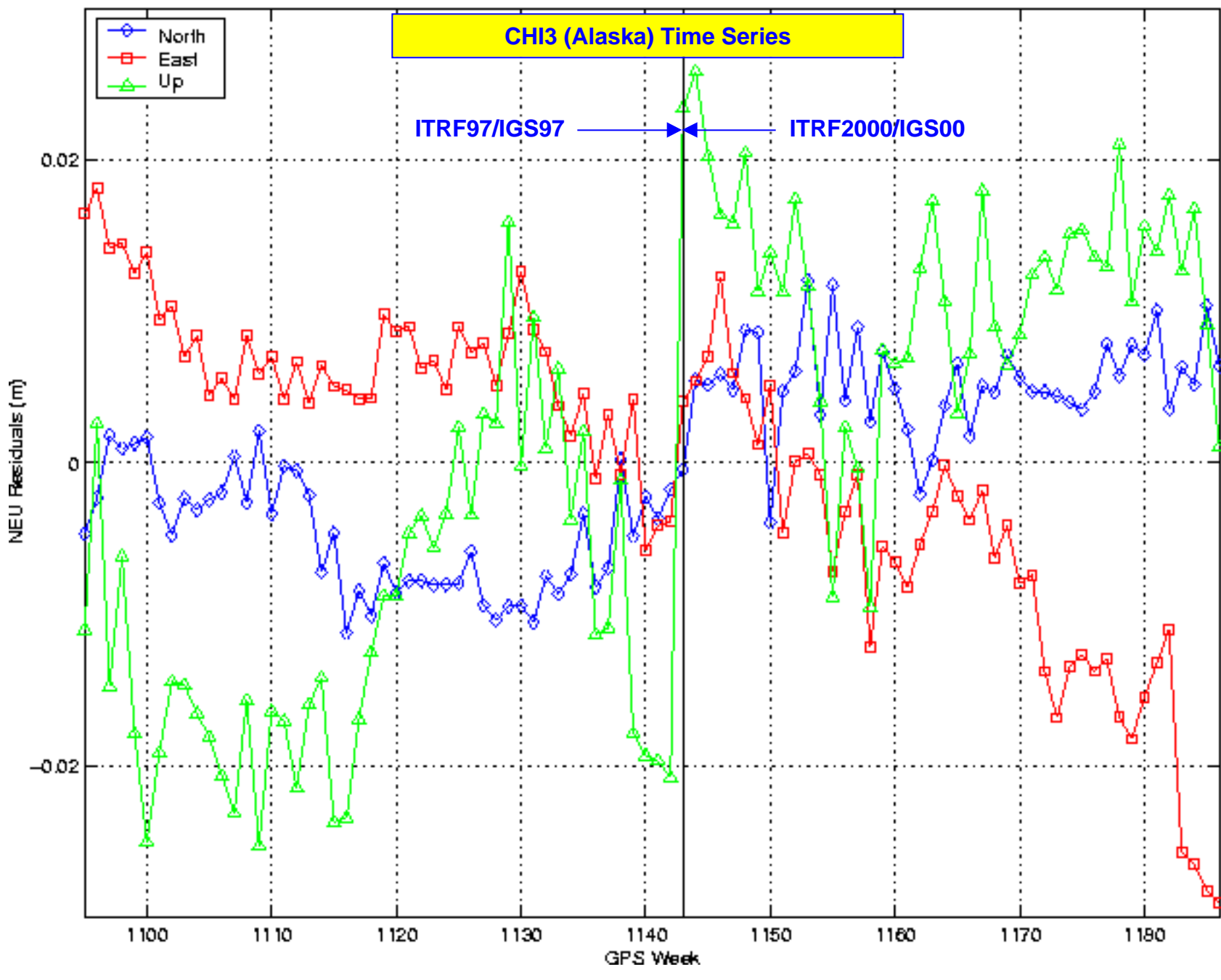
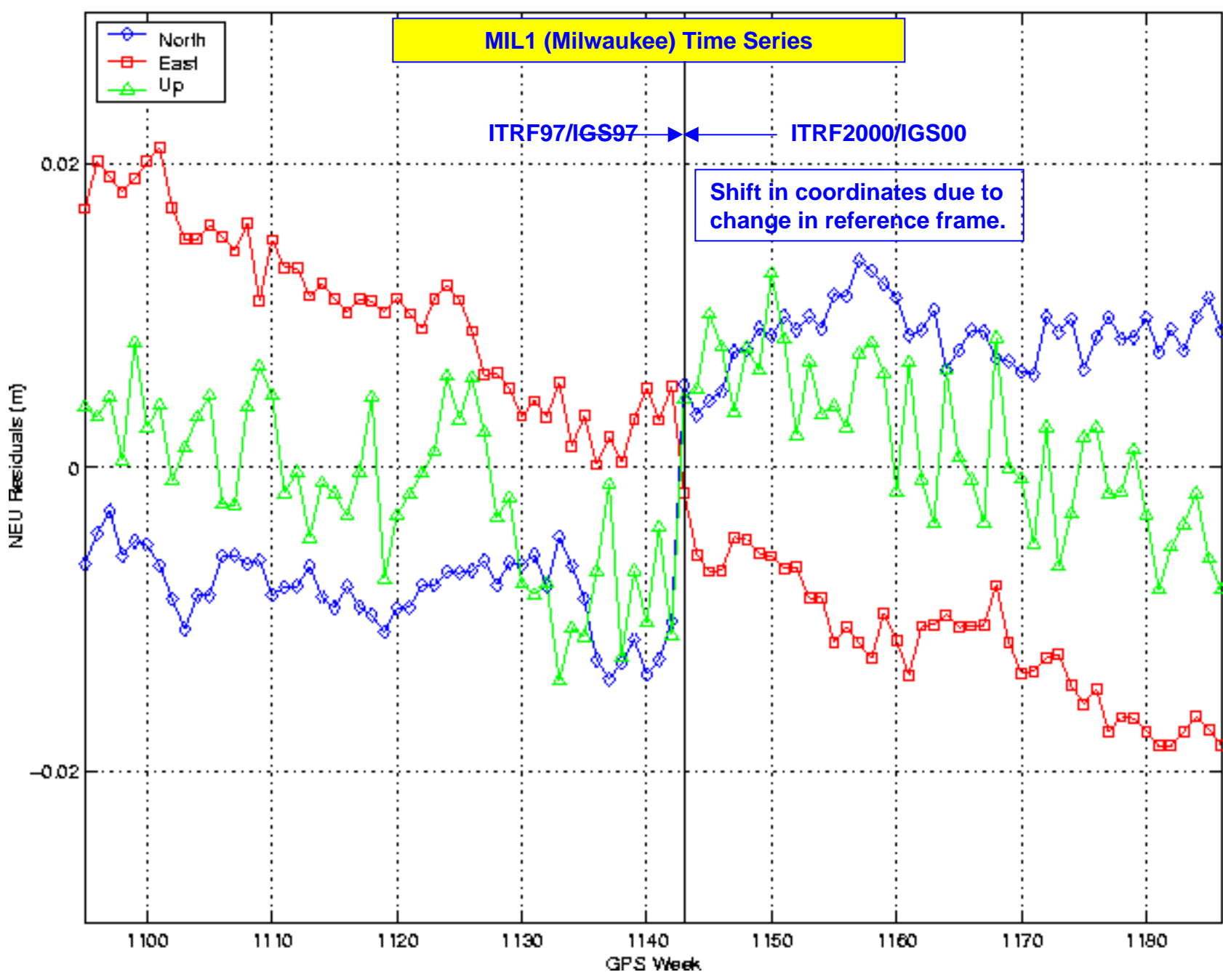
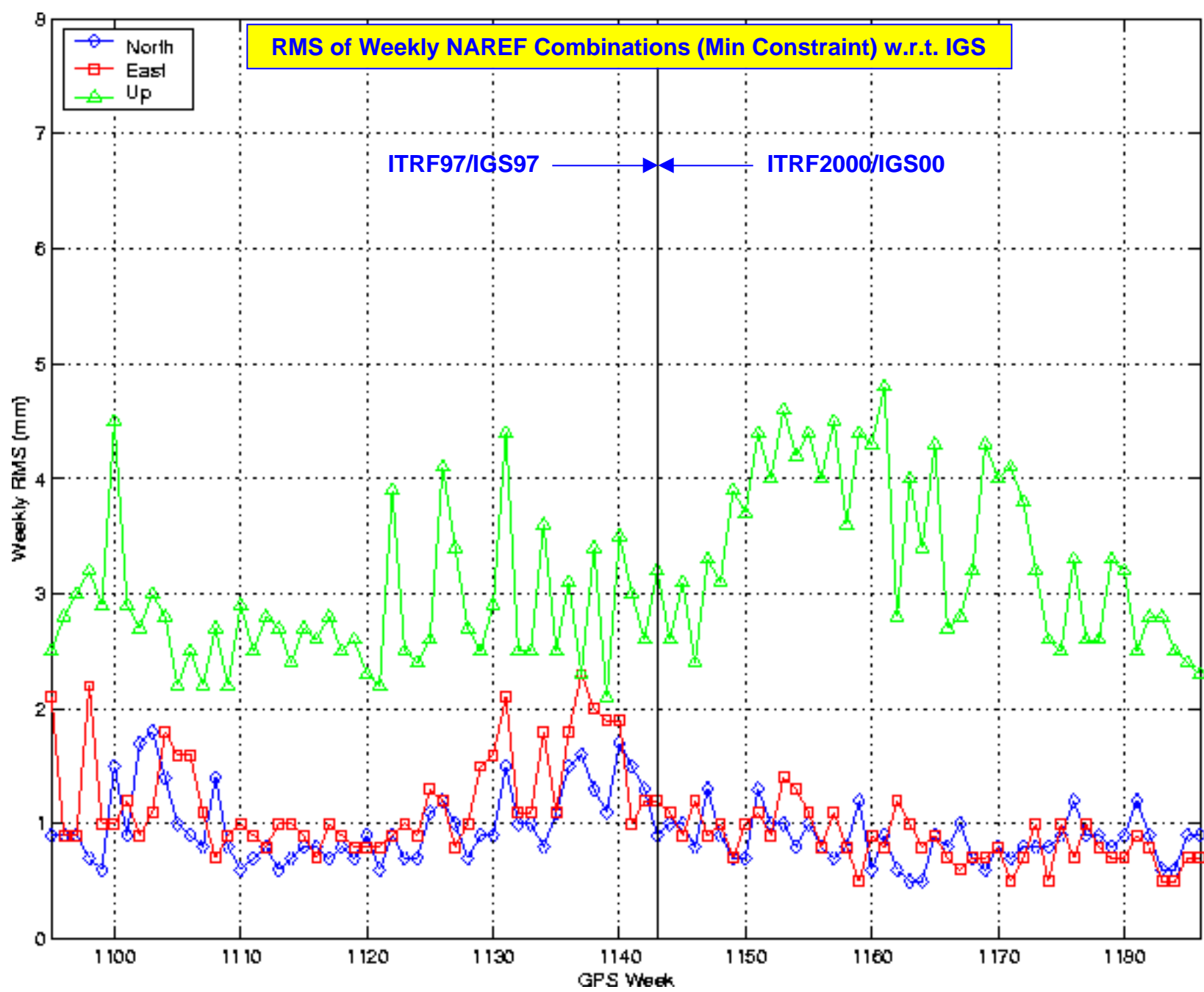


FUTURE WORK

- Continue submitting weekly combination solutions to IGS (solutions for 2002 available at CDDIS)
- Begin cumulative solutions for velocity estimation
- Enhance SINEX software to handle larger regional networks

COMBINATION RESULTS

- **Differences between weekly NAREF combinations (minimum constraint) & IGS weekly solutions** show agreement at IGS stations to better than 3 mm horizontally and 5 mm vertically before inclusion of NGS solution and 8 mm after (see plot below at left).
- **Differences between weekly NAREF combinations (integrated via over-constraints) & IGS weekly solutions** show good agreement at IGS stations to better than about 1 mm horizontally and 4 mm vertically (see plot below at right).
- **Residual discrepancies between individual regional solutions (transformed) and final NAREF combinations** show good agreement on average to better than 2 mm horizontally and about 4 mm vertically (see plots at bottom left of poster).
- **Coordinate time series** (see plots below at bottom) show typical variations for some densification points (residuals are with respect to mean). Note shift in coordinates due to change in reference frame from ITRF97 to ITRF2000.



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