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### CONCLUSIONS:

- VLBI antenna coordinate velocities produced from IVS-R1 and -R4 sessions are approximately the same with the ITRF 2000 velocities of the same sites.
- After removing the linear trend from the series, sinusoidal (harmonic) variations of the series (tidal variations of the antenna coordinates) if they exist are determined by estimating the tidal phase of the Fourier series based on the frequency of the maximum spectral density (power) in the respective spectra plot (periodogram).
- In most of the antennas harmonic variations are not found.
- The amplitudes of the detected variations are small in ranges between 0.4 - 0.1 mm. This may be caused by the artifacts of the data interpolation carried out linearly or the data itself because of the  $m$ -modeled geophysical parts of the  $n$  priori coordinates derived.
- The  $m$ -modeled data are not  $m$ -modeled. The  $m$ -modeled data provided by DGFI has already been modeled as a priori by certain geophysical models (e.g. troposphere, solid Earth tide, ocean loading, and pole tide) except atmospheric loading and deformation deformation.

Algorithm (time interval : 2002.01 – 2006.53, number of data : 262)											
Up				East			North				
Iteration	Amplitude (mm)	Phase (°)	Period (day)	Iteration	Amplitude (mm)	Phase (°)	Period (day)	Iteration	Amplitude (mm)	Phase (°)	Period (day)
1	0.21	-59.4	41.1	1	0.30	-47.6	205.6	1	0.21	-1.1	234.9
2	0.25	-72.9	33.8					2	0.17	-25.9	31.0
<b>Fortalez</b> (time interval : 1999.02 – 2008.9, number of data : 525)											
1	0.17	-50.2	45.4	1	0.13	-37.2	325.8	1	0.12	34.3	155.8
<b>Kokoe</b> (time interval : 1994.01 – 2008.9, number of data : 1129)											
1	0.17	-50.2	45.4	-	-	-	-	-	-	-	-
<b>Nyale20</b> (time interval : 1980.03 – 2008.9, number of data : 723)											
1	0.15	-6.05	190.4	-	-	-	-	-	-	-	-
<b>Westford</b> (time interval : 2002.0 – 2008.9, number of data : 417)											
1	0.25	-19.1	360.9	1	0.21	-76.9	210.6	1	0.66	-41.9	360.9
2	0.21	13.8	148.6	-	-	-	-	2	0.43	-27.4	2536.9
3	0.16	76.7	84.2	-	-	-	-	3	0.25	-30.5	99.6
4	0.12	72.2	126.3	-	-	-	-	-	-	-	-
5	0.11	-48.7	53.8	-	-	-	-	-	-	-	-
<b>Wetzell</b> (time interval : 1994.0 – 2008.9, number of data : 1353)											
1	0.35	-45.2	300.5	1	0.18	-33.1	1819.6	1	0.24	-36.6	5458.9
2	0.13	-74.9	143.6	2	0.14	-34.1	341.2	-	-	-	-
3	0.04	-20.0	92.5	3	0.12	-73.8	779.8	-	-	-	-
4	0.12	41.0	92.5	4	0.12	41.0	1364.7	-	-	-	-