**7/21/05:**

Yoyo control was implemented in the 3 scenarios in file sound_faf05_jul21_02_day0_1_sec3.mat. Today the 3 scenarios are in section 3. The total length is about 4.6km. Parameter values in the table below were used today.

| |
|---|
| sound frequency=100Hz |
| sound source r=4550m |
| sound source z=35m |
| receivers z=5m |
| horizontal correlation length=2000m |
| vertical correlation length=5m |
| AUV maximum range=4551m |

## Optimal: points=30, threshold=1000 for morning 7/21/05

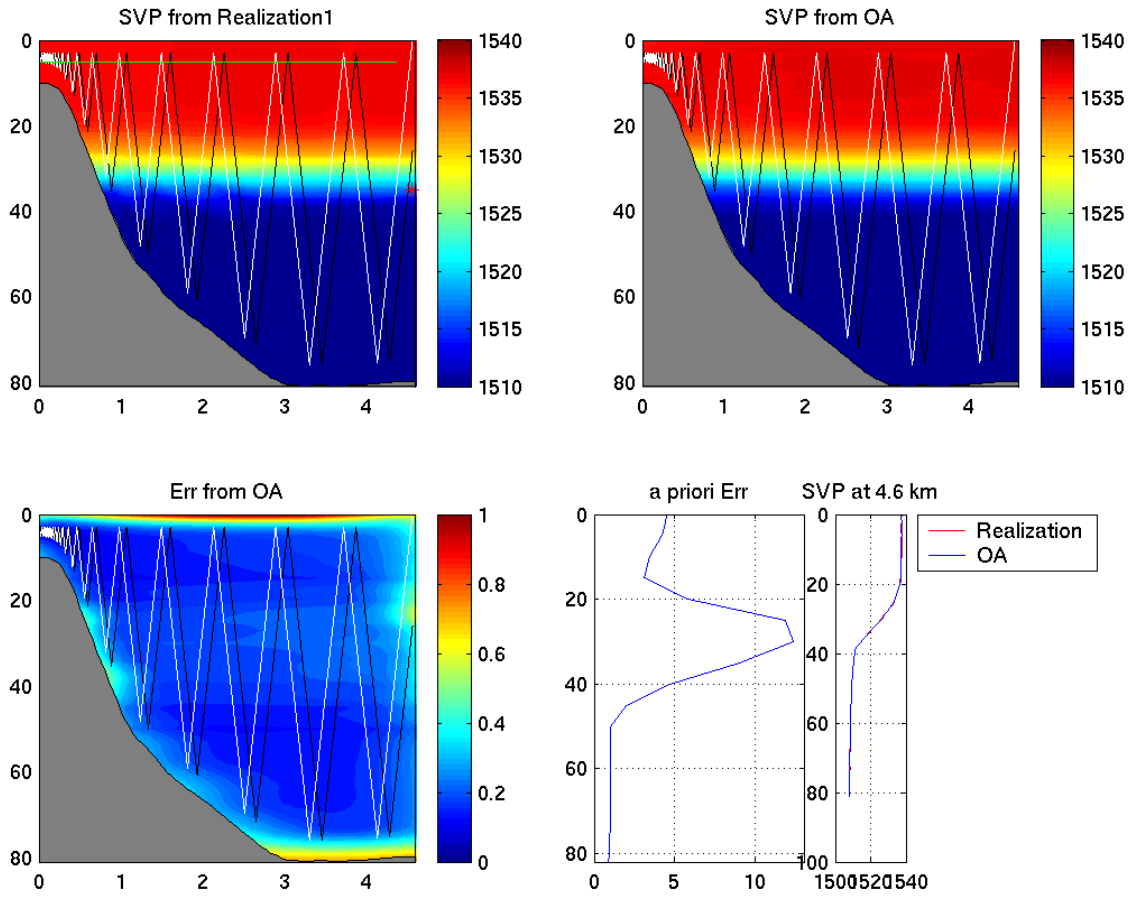


Figure 21: Yoyo control implementation. Morning 7/21/05. sound_faf05_jul21_02_day0_1_sec3.mat. Black line is the forward path; White line is the backward path; Red star is the sound source location; Green line is receivers' location. Note that to avoid bottom AUV turns around at 5 m above bottom.

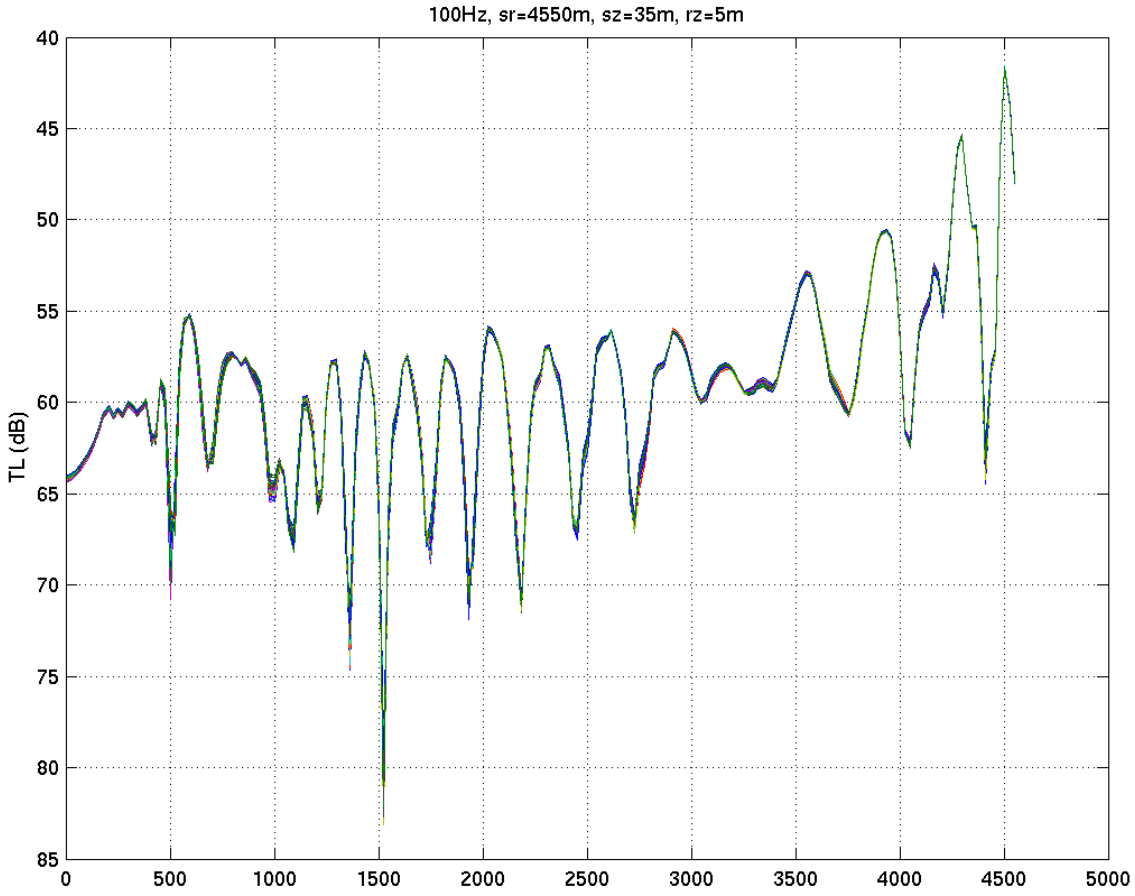


Figure 22: Morning 7/21/05. sound_faf05_jul21_02_day0_1_sec3.mat.

**Optimal: points=30, threshold=1000 for afternoon 7/21/05**
**Optimal: points=30, threshold=1000 for morning 7/22/05**

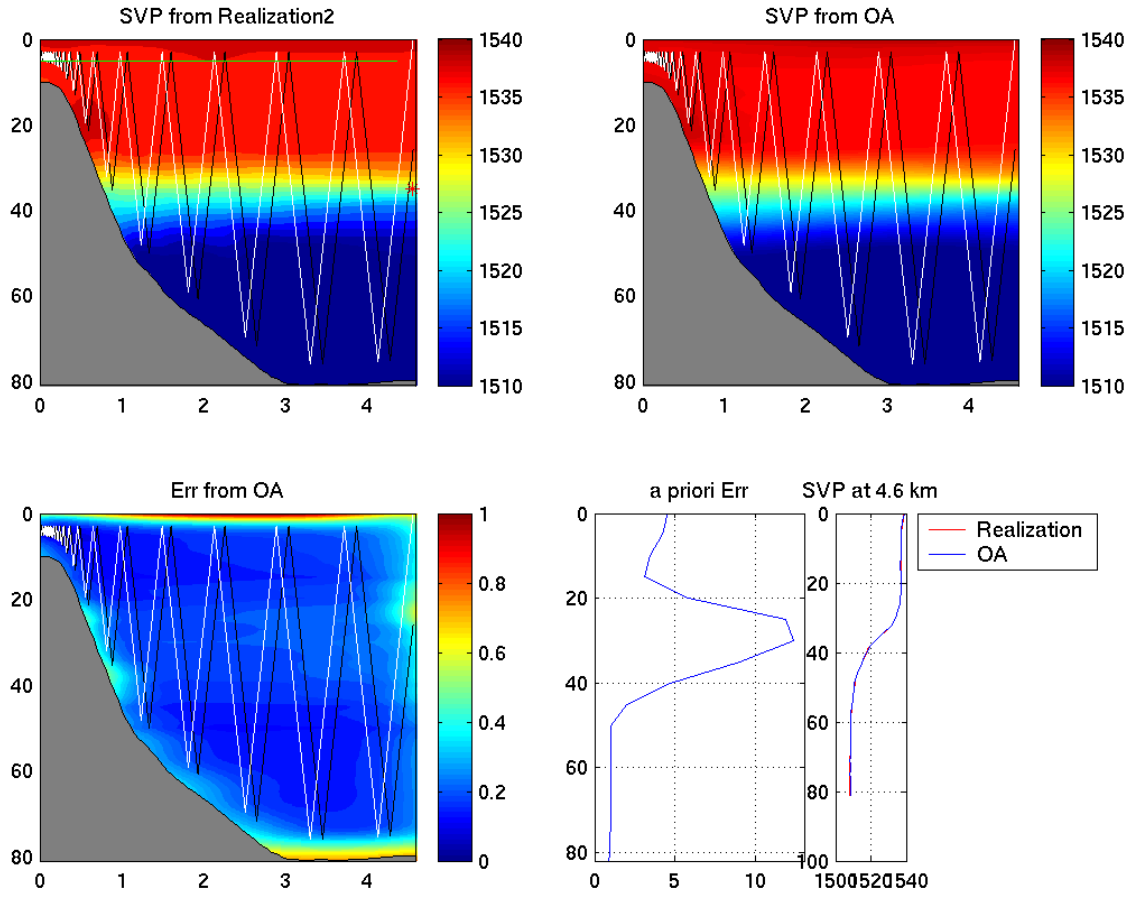


Figure 23: Yoyo control implementation. Afternoon 7/21/05. sound_faf05_jul21_02_day0_1_sec3.mat. Black line is the forward path; White line is the backward path; Red star is the sound source location; Green line is receivers' location. Note that to avoid bottom AUV turns around at 5 m above bottom.

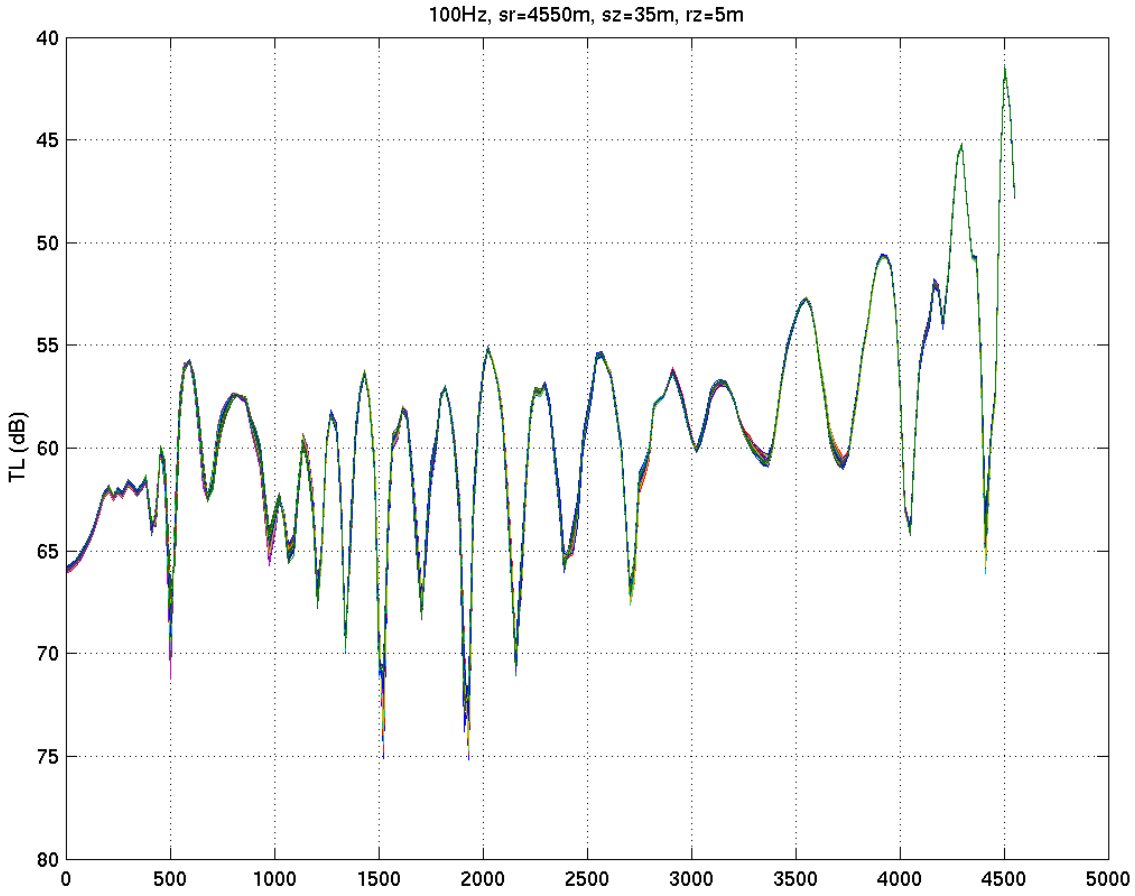


Figure 24: Afternoon 7/21/05. sound_faf05_jul21_02_day0_1_sec3.mat.

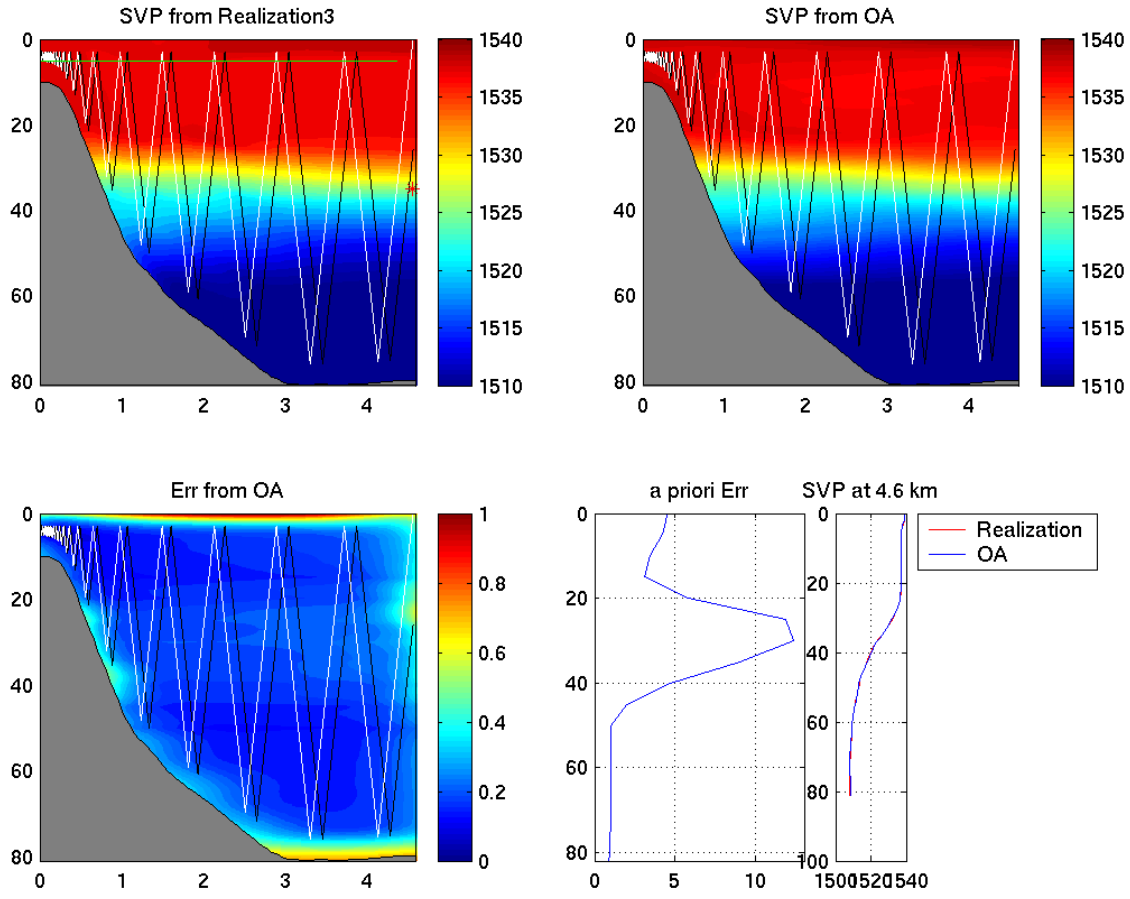


Figure 25: Yoyo control implementation. Morning 7/22/05. sound_faf05_jul21_02_day0_1_sec3.mat. Black line is the forward path; White line is the backward path; Red star is the sound source location; Green line is receivers' location. Note that to avoid bottom AUV turns around at 5 m above bottom.

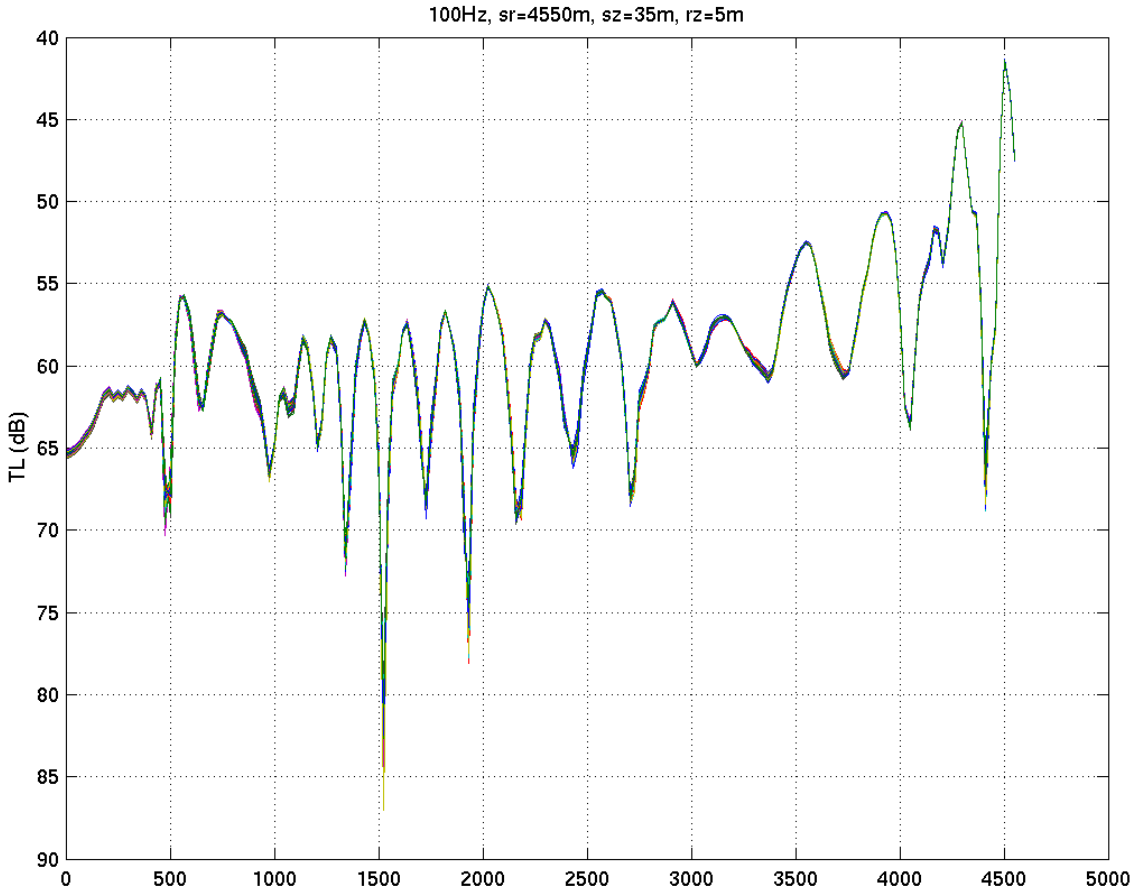


Figure 26: Morning 7/22/05. sound_faf05_jul21_02_day0_1_sec3.mat.