

Figure 1: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC EXPEDITE-RCS of length $L = 9.1875$ in at frequency $f = 2.58$ GHz.

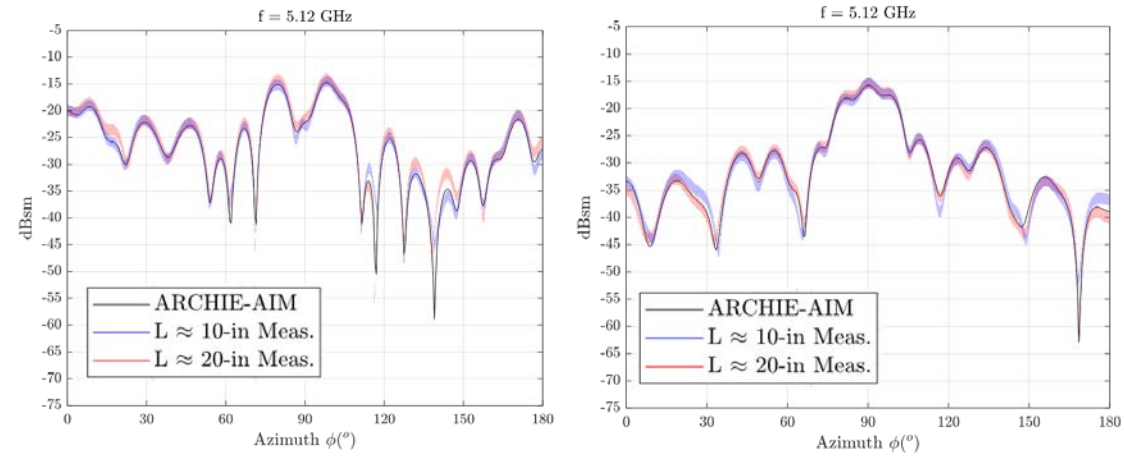


Figure 2: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC EXPEDITE-RCS of length $L = 9.1875$ in at frequency $f = 5.12$ GHz.

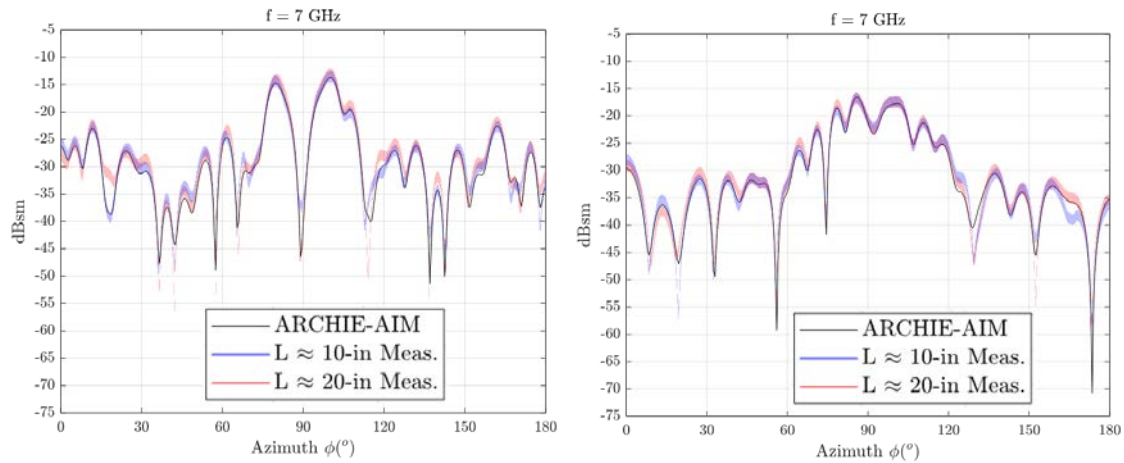


Figure 3: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC EXPEDITE-RCS of length $L = 9.1875$ in at frequency $f = 7$ GHz.

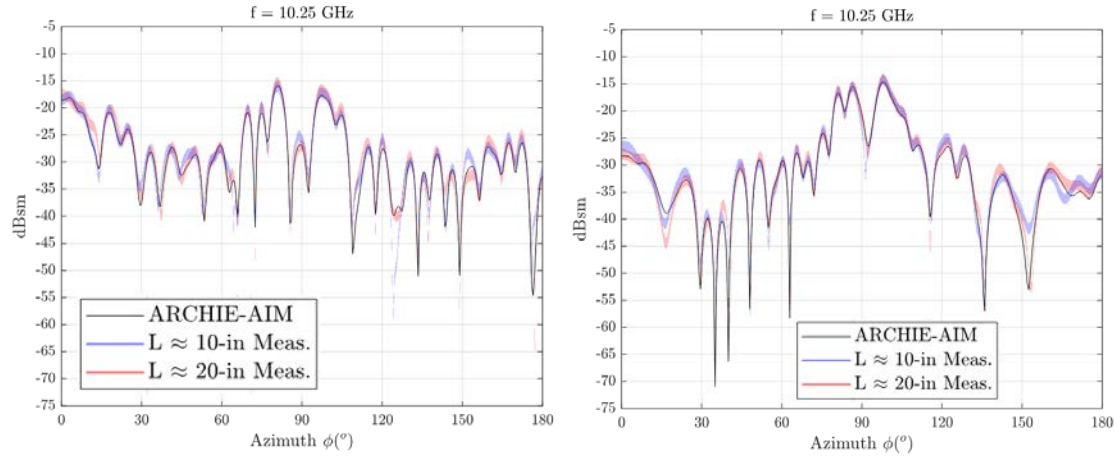


Figure 4: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC EXPEDITE-RCS of length $L = 9.1875$ in at frequency $f = 10.25$ GHz.

The above RCS results are that of the reference measurement and simulation data in the benchmark suite.

Notes

1. The measurement data are provided at every 0.25° in the azimuthal range; the simulation data are at every 0.5° .
2. The $L \approx 20$ in EXPEDITE-RCS measurement data were actually obtained at half the frequency of the $L \approx 10$ in EXPEDITE-RCS for each case and shifted down by $10\log 4$ dB [1].
3. The simulation data were calculated by using the ARCHIE-AIM code, a frequency-domain FFT-accelerated integral-equation solver developed at UT Austin [2]-[4].

References

- [1] J. T. Kelley, D. A. Chamulak, C. C. Courtney, and A. E. Yilmaz, "Rye Canyon radar cross-section measurements of benchmark almond targets," *IEEE Ant. Propag. Soc. Mag.*, Feb. 2020.
- [2] M. F. Wu, G. Kaur, and A. E. Yilmaz, "A multiple-grid adaptive integral method for multi-region problems," *IEEE Trans. Antennas Propag.*, vol. 58, no. 5, pp. 1601-1613, May 2010.
- [3] F. Wei and A. E. Yilmaz, "A more scalable and efficient parallelization of the adaptive integral method part I: algorithm," *IEEE Trans. Antennas Propag.*, vol. 62, no. 2, pp. 714-726, Feb. 2014.
- [4] J. W. Massey, V. Subramanian, C. Liu, and A. E. Yilmaz, "Analyzing UHF band antennas near humans with a fast integral-equation method," in *Proc. EUCAP*, Apr. 2016.