

Figure 1: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the open tail-coated almond of length $L=9.936$ in at frequency $f=2.58$ GHz.

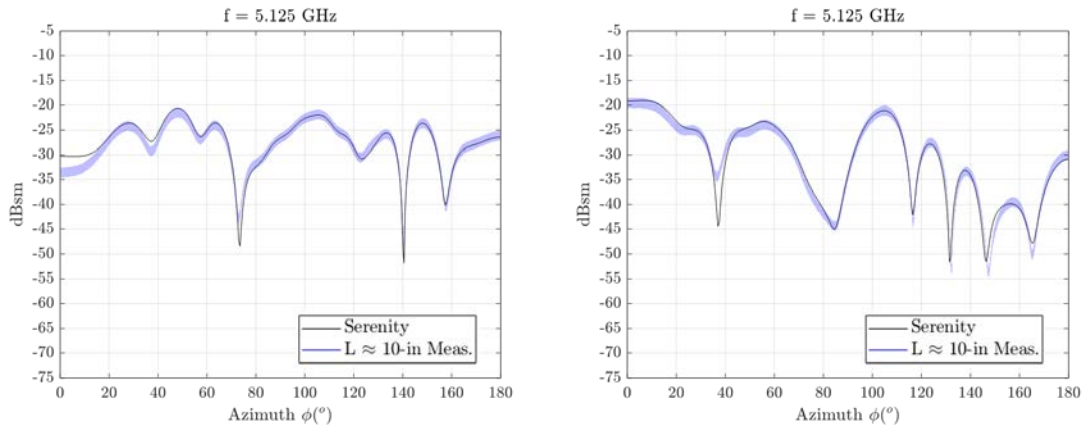


Figure 2: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the open tail-coated almond of length $L=9.936$ in at frequency $f=5.125$ GHz.

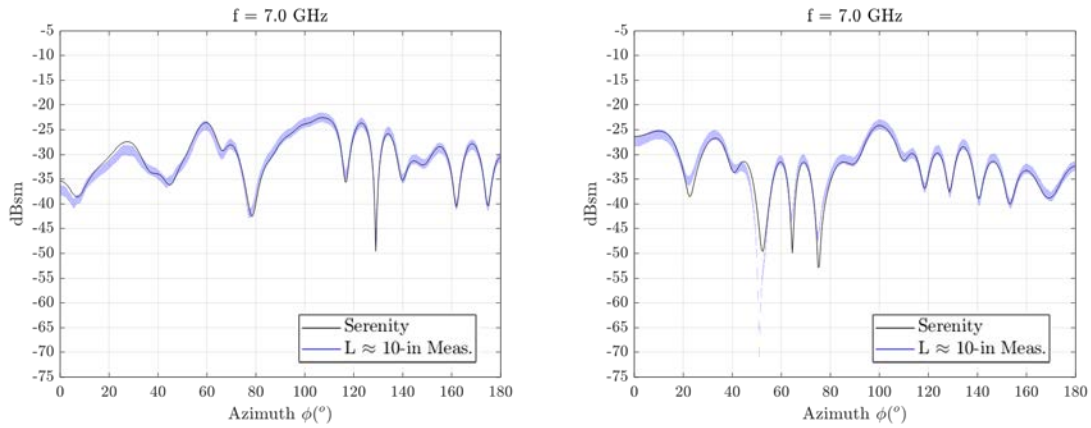


Figure 3: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the open tail-coated almond of length $L=9.936$ in at frequency $f=7$ GHz.

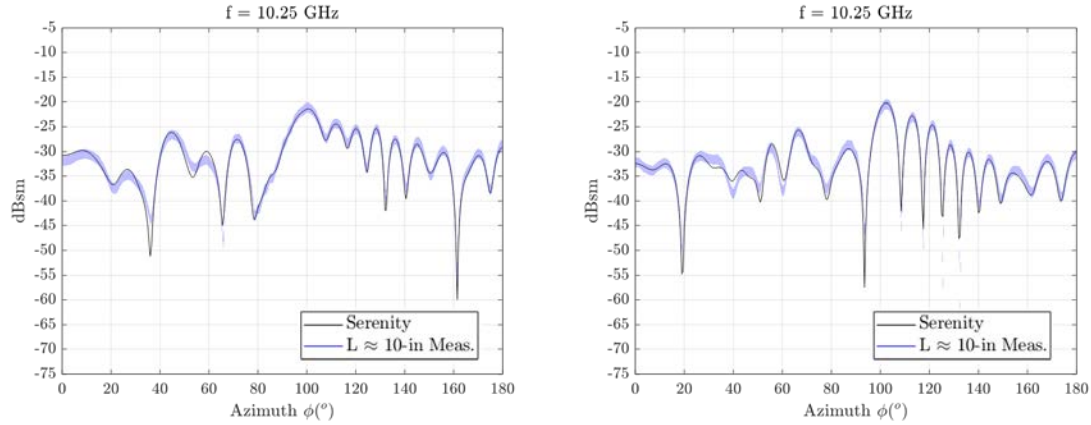


Figure 4: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the open tail-coated almond of length $L = 9.936$ in at frequency $f = 10.25$ GHz.

The above RCS results are that of the reference measurement data in the benchmark suite. The measurement data in the suite are the same as that shown in [1] and are plotted within a ± 1 dB window to represent the measurement uncertainties.

Notes

1. The measurement data are provided at every 0.5° in the azimuthal range.
2. The simulation data were calculated by using the Serenity code, a commercial frequency-domain integral-equation solver that uses the adaptive cross approximation [2] or a multi-level version of it [3]. Additional information on the code may be found in [4].

References

- [1] J. T. Kelley, A. E. Yilmaz, D. A. Chamulak, and C. C. Courtney, "Measurements of non-metallic targets for the Austin RCS benchmark suite," in *Proc. Ant. Meas. Tech. Assoc. (AMTA) Symp.*, Oct. 2019.
- [2] K. Zhao, M. N. Vouvakis, and J.-F. Lee, "The adaptive cross approximation algorithm for accelerated method of moments computations of EMC problems," *IEEE Trans. Electromagn. Compat.*, vol. 47, pp. 763–773, Nov 2005.
- [3] W. C. Gibson, "Efficient solution of electromagnetic scattering problems using multilevel adaptive cross approximation (MLACA) and LU factorization," *IEEE Trans. Antennas Propagat.*, vol. 68, pp. 3815–3823, May 2020.
- [4] W. C. Gibson, *The Method of Moments in Electromagnetics*. Taylor and Francis/CRC Press, second ed., 2014.