

Figure 1: The HH ($\sigma_{\phi\phi,\text{dB}}$, left) and VV ($\sigma_{\theta\theta,\text{dB}}$, right) polarized RCS for the PEC Open-Duct PRIME model of length $L=9.0116$ in at frequency $f=2.56$ GHz.

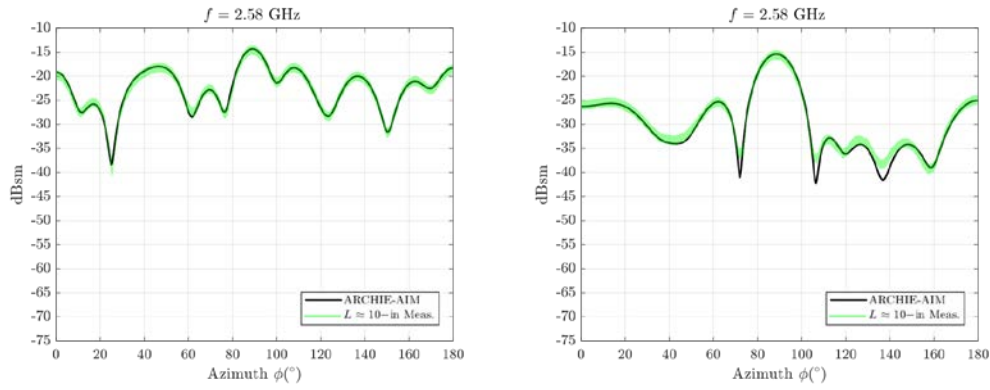


Figure 2: The HH ($\sigma_{\phi\phi,\text{dB}}$, left) and VV ($\sigma_{\theta\theta,\text{dB}}$, right) polarized RCS for the PEC Open-Duct PRIME model of length $L=9.0116$ in at frequency $f=2.58$ GHz.

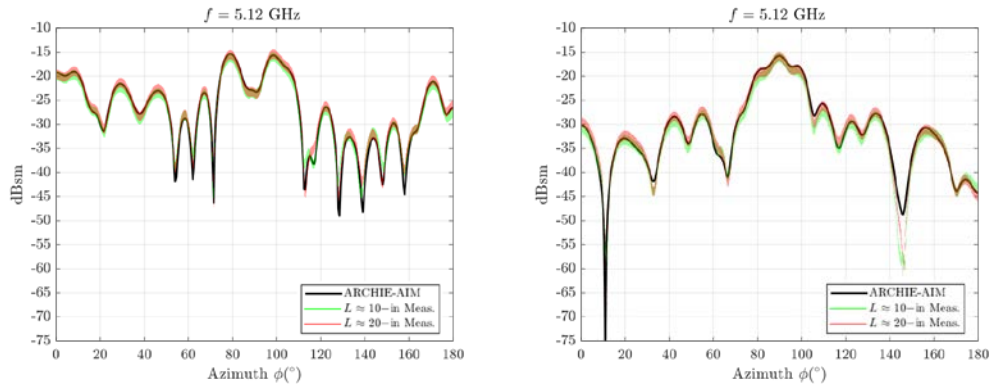


Figure 3: The HH ($\sigma_{\phi\phi,\text{dB}}$, left) and VV ($\sigma_{\theta\theta,\text{dB}}$, right) polarized RCS for the PEC Open-Duct PRIME model of length $L=9.0116$ in at frequency $f=5.12$ GHz.

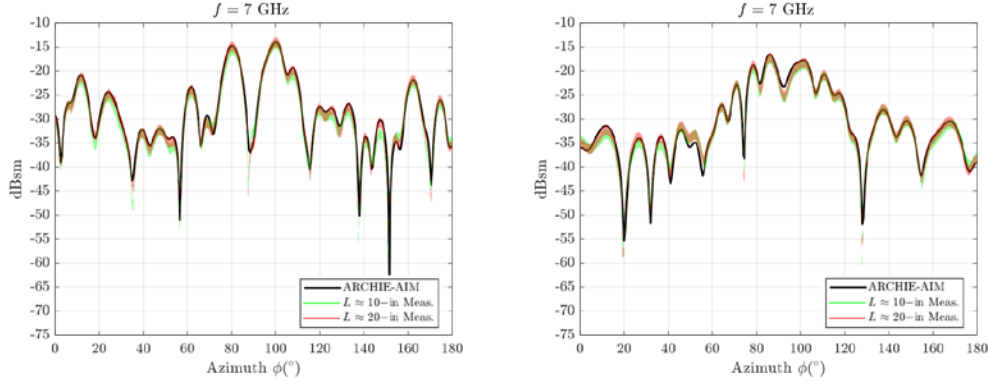


Figure 4: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC Open-Duct PRIME model of length $L=9.0116$ in at frequency $f=7$ GHz.

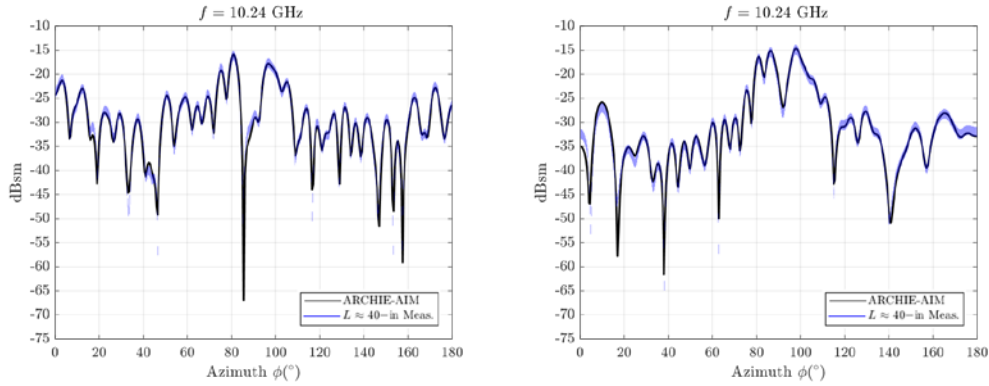


Figure 5: The HH ($\sigma_{\phi\phi}$, dB, left) and VV ($\sigma_{\theta\theta}$, dB, right) polarized RCS for the PEC Open-Duct PRIME model of length $L=9.0116$ in at frequency $f=10.24$ GHz.

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 $L \approx \{18, 36\}$ in EXPEDITE-RCS measurement data were actually obtained at $\left\{\frac{1}{2}, \frac{1}{4}\right\}$ the frequency of the $L \approx 9$ in Open-Duct PRIME model for each case and shifted down by $\{10 \log 4, 10 \log 16\}$ 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

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- [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.

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- [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.