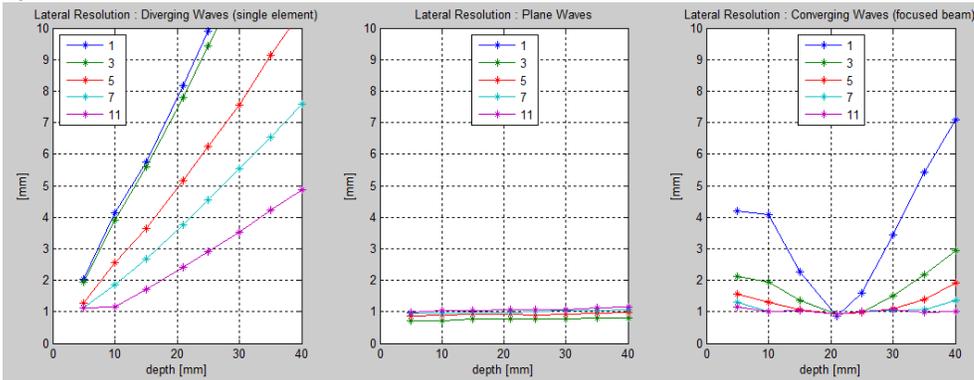


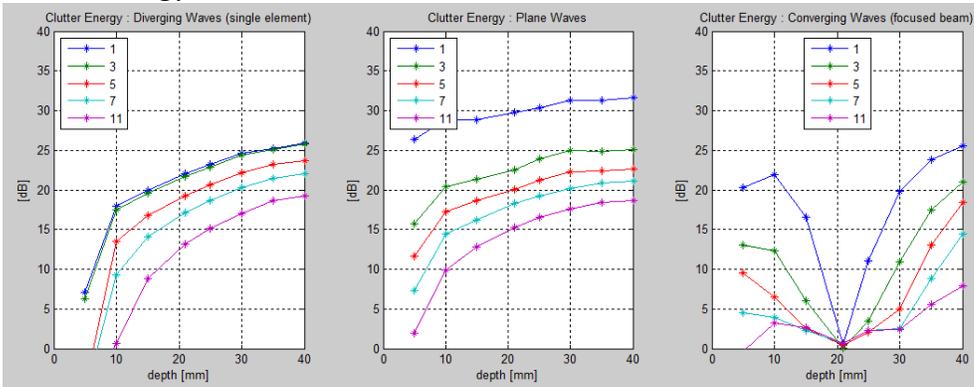
Generalized Synthetic Transmit Focusing Techniques

1. What is synthetic transmit focusing?
 - a. Synthetic transmit focusing effectively creates a continuously focused transmit beam by coherently combining receive echoes from a collection of spatially distinct transmit beams.
2. Various types of synthetic transmit focusing
 - a. Diverging waves (Transmit focus depth ≤ 0 (at or behind the transducer))
 - b. Plane waves (Transmit focus depth \rightarrow infinite)
 - c. Converging waves (Transmit focus depth > 0 (within region of interest))
3. Enabling technology for synthetic transmit focusing
 - a. Massively parallel receive beamforming
4. Methods for evaluating synthetic transmit focusing types
 - a. Spatial resolution
 - b. Contrast resolution
 - c. Temporal resolution
 - d. Motion sensitivity
 - e. Non-linear harmonics

5. Spatial Resolution



6. Clutter Energy



7. Advantages / limitations of synthetic transmit focusing

		Spatial Resolution	Contrast Resolution	Temporal Resolution	Motion Sensitivity	Non-linear Harmonics	Signal-to-Noise Ratio (SNR)
Diverging waves (single element)		-	-	--	--	--	--
Plane waves		+++	-	+++++	+	-	-
Converging waves (focused beams)		++	+++	++	++	++	++