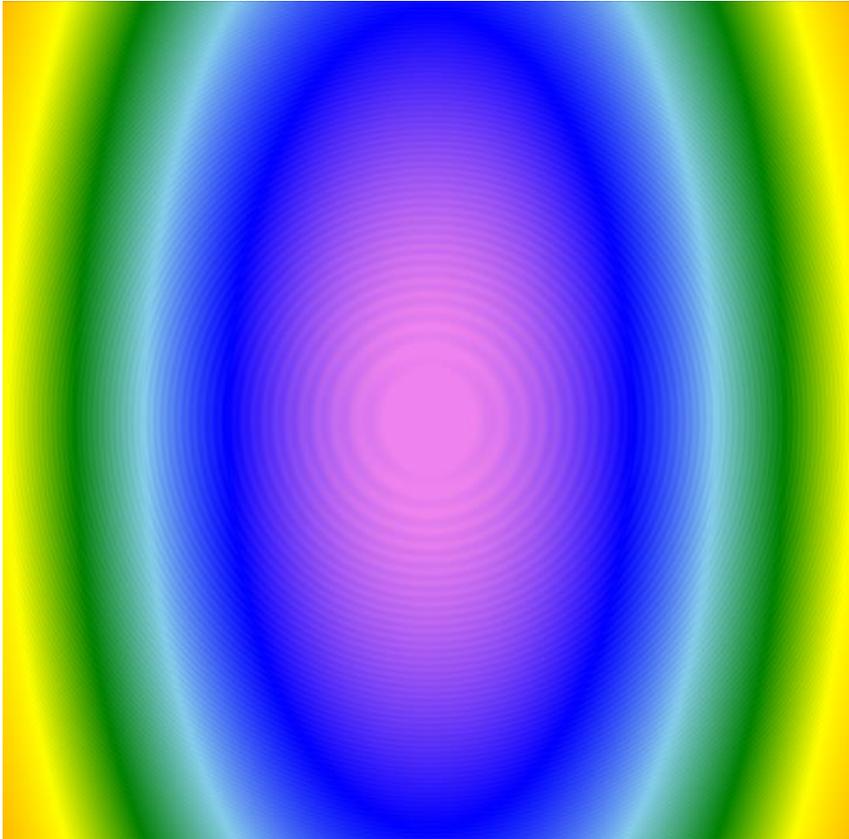


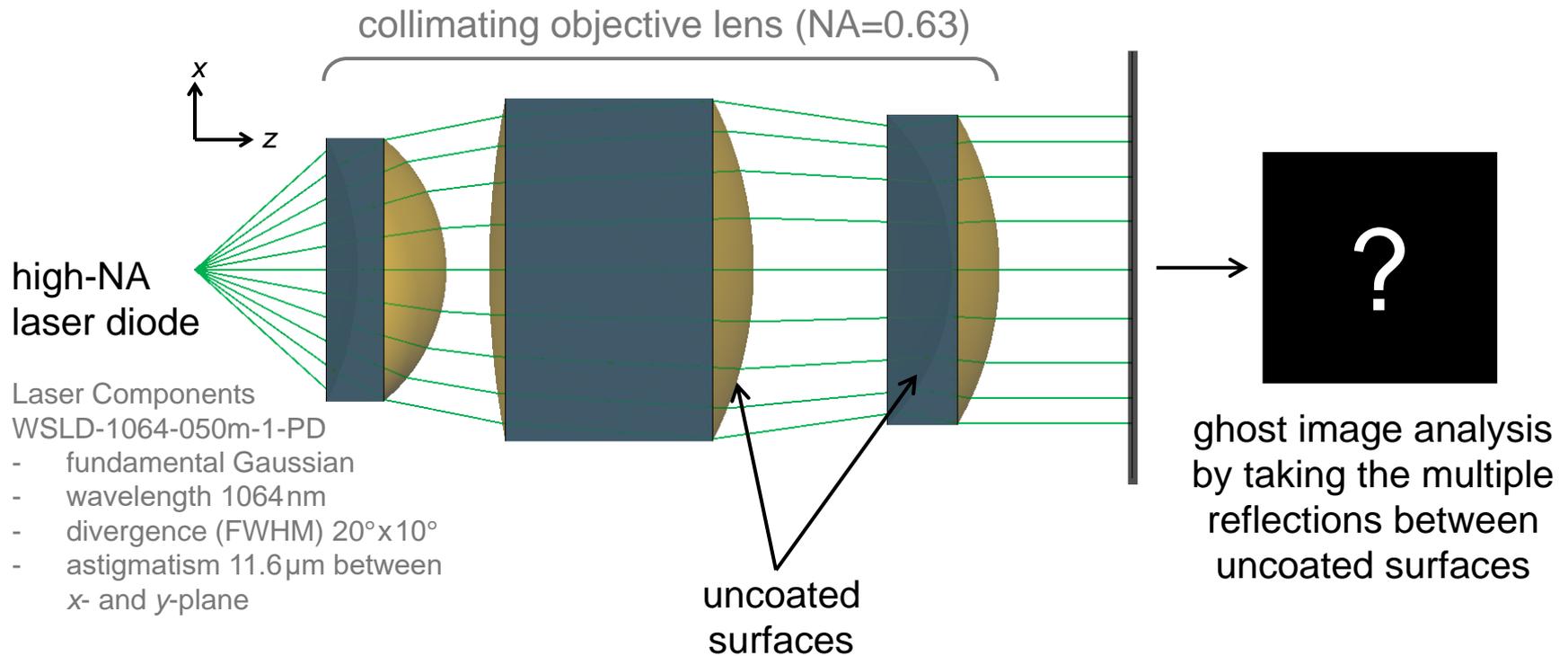
Investigation of Ghost Imaging Effects in Collimation System

Abstract

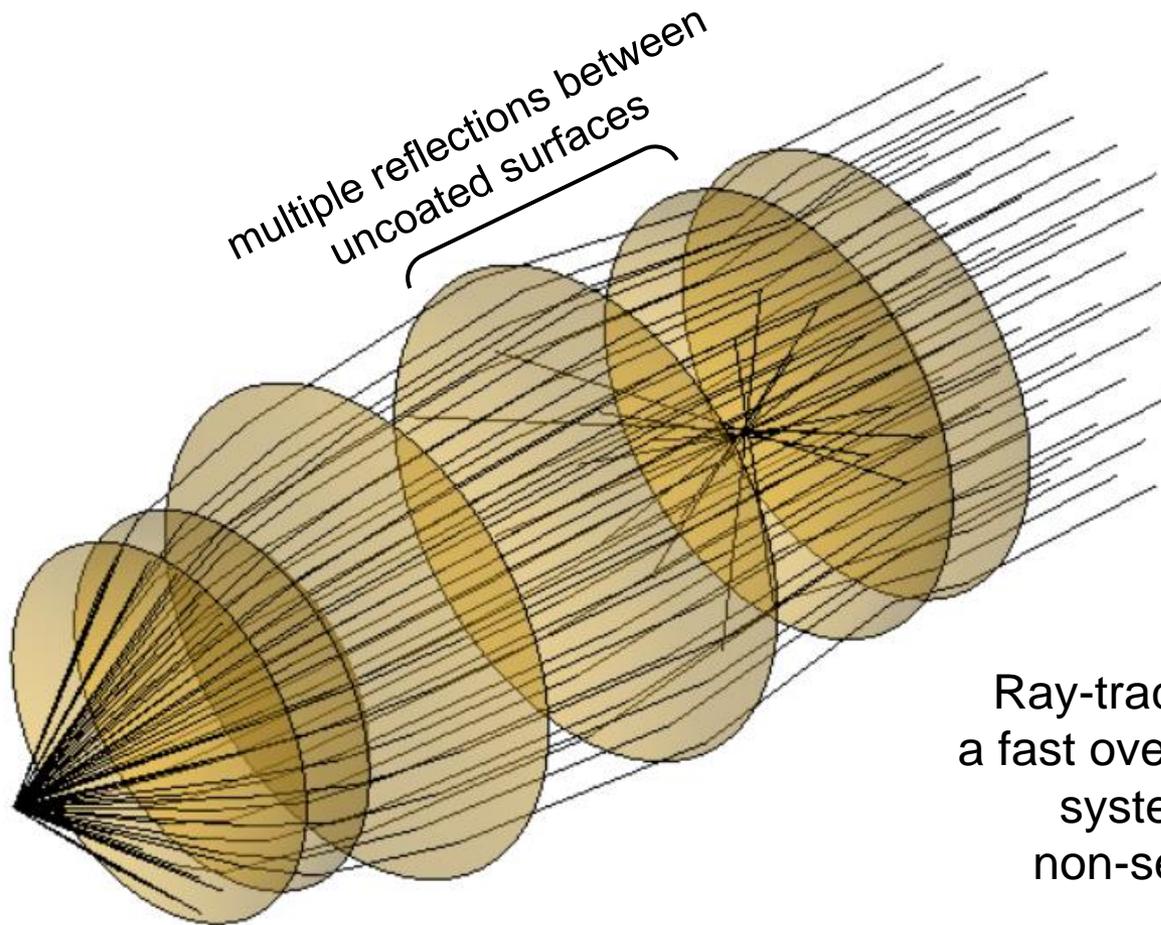


In any optical system there are always stray light which causes ghost images. Stray light may come from different effect, like undesired reflections and scattering. A collimation lens system for high-NA laser diode is taken as an example. By using the non-sequential tracing technique in VirtualLab, the effect from the surface coating is studied. It is shown that the multiple reflections between uncoated surfaces may cause interference pattern in the collimated beam.

Modeling Task

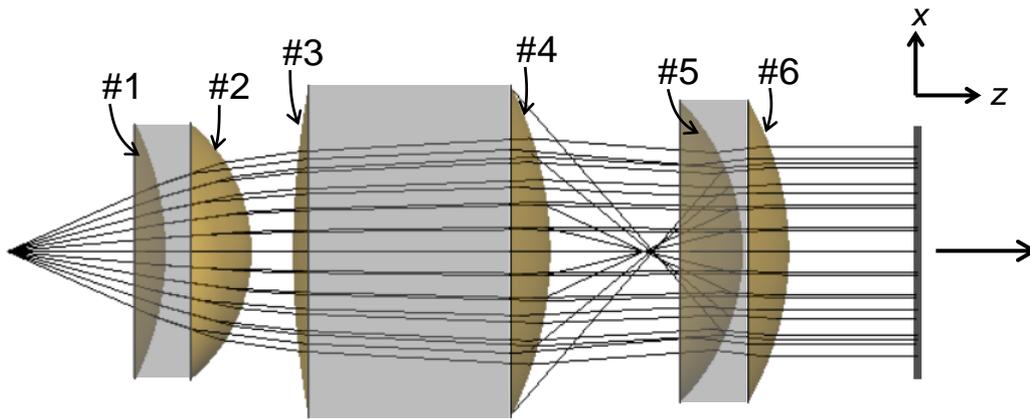


Results

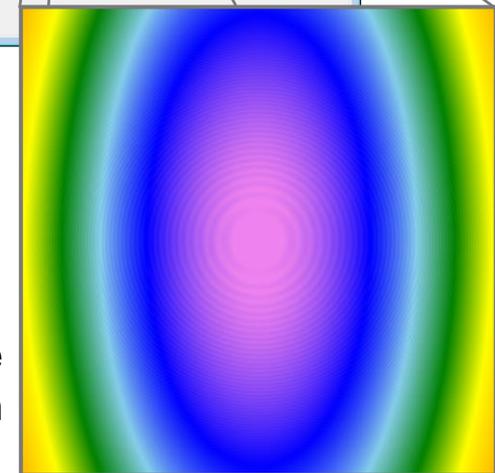
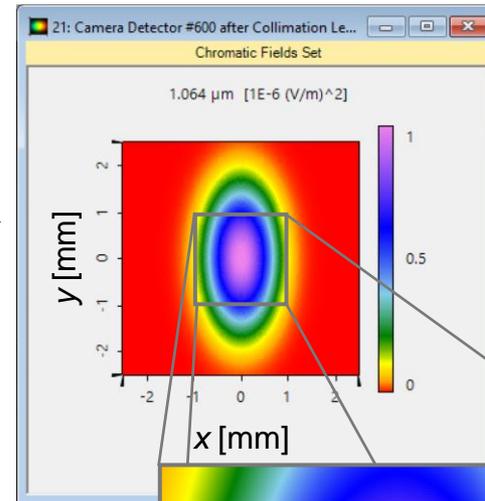


Ray-tracing analysis provides a fast overview of the complete system in space, including non-sequential interactions.

Results

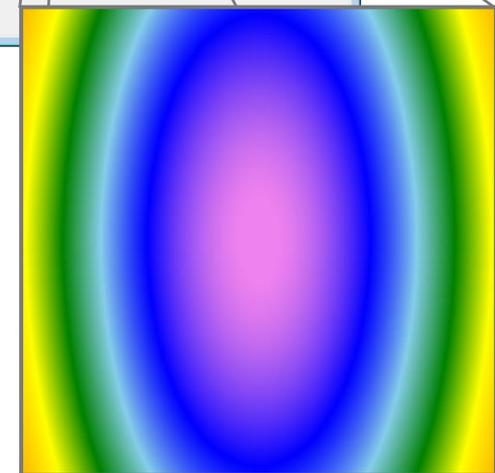
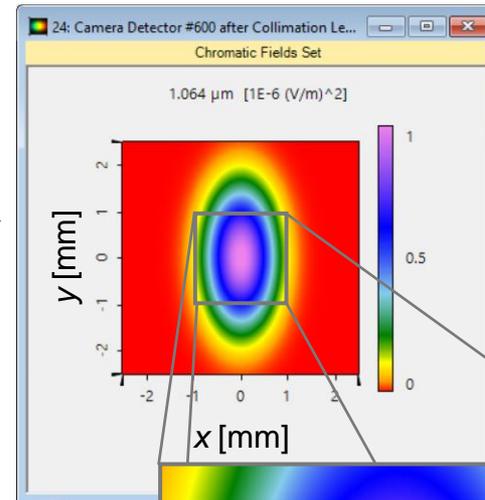
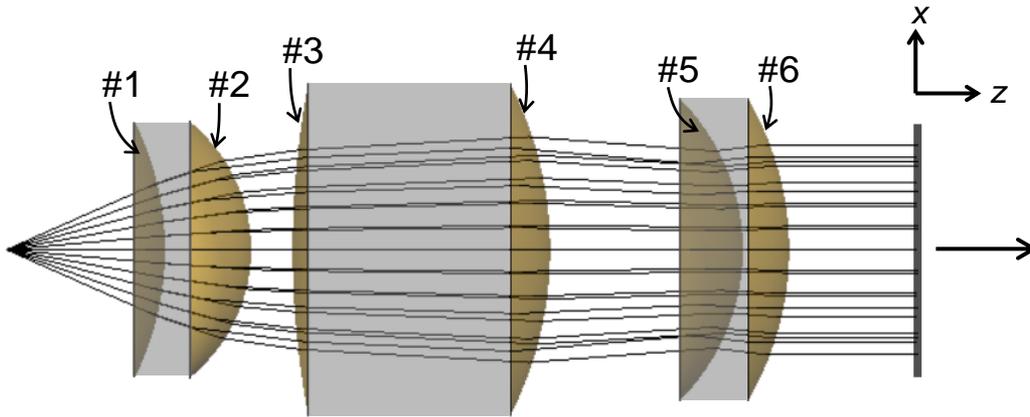


	#1	#2	#3	#4	#5	#6
+/+	√	√	√	√	√	√
+/-					√	
-/-						
-/+				√		



Simulation including interference caused by multiple reflections between uncoated surfaces takes 16 seconds.

Results



	#1	#2	#3	#4	#5	#6
+/+	√	√	√	√	√	√
+/-						
-/-						
-/+						

Perfect AR coating is assumed and can be realized by setting up the surface channels for non-sequential tracing. Then, the interference pattern disappears.

Document Information

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