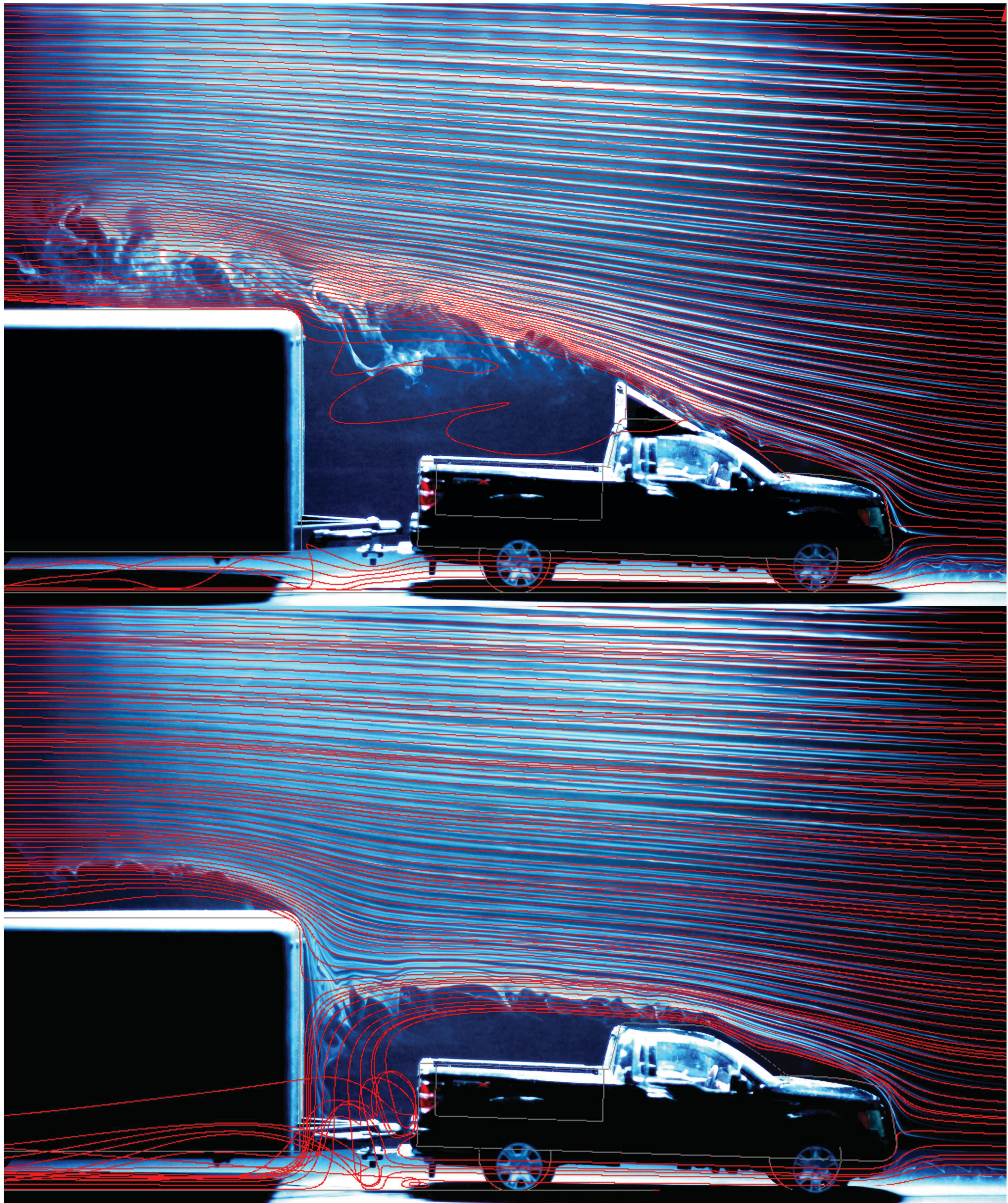


Effectiveness of Drag Reduction Deflectors on Light Vehicle Trailer Systems – *Small Deflector, Large Effect*

Royce Boyer, Lorenz Sigurdson, and Carlos F. Lange

Contact: Lorenz@ualberta.ca

Vortex Fluid Dynamics Lab
University of Alberta



It is well known that tractor cabin deflectors will work to reduce the drag on heavy duty tractor-trailer road vehicles. However for Light Vehicle-Trailer Systems there are very few studies that indicate how effective they can be, considering that the location of the deflector is much farther ahead of the trailer. The bluish-white smoke-wire streaklines in the augmented reality images above show that even a small deflector in the upper image can move the stagnation point away from the central face of the trailer. The augmentation with CFD red streamlines matches the streaklines reasonably well, and preliminary CFD estimates an overall drag reduction of 15% for this non-optimized deflector. The Reynolds number of 13,700 is two orders of magnitude less than the typical full-scale of 3 million, but because of the fixed separation line the results are expected to be of qualitative use in choosing useful deflector geometries to study.

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