Geometric Structures Effect on the Aerodynamic Efficiency of Semi Fairings

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This project looks at the aerodynamics of different semi fairing designs and their drag coefficients. This study looked into reducing diesel consumption by increasing the aerodynamic efficiency of the semis by creating a better fairing design. This was done by 3D printing model semis with different fairing designs. A total of 5 different designs were made, some designs used biomimicry to apply aspects from nature, while others were a completely synthetic design. Each one explores a different approach to manipulating the air in the most efficient way. The semi model was placed in a wind tunnel and drag was recorded for each individual fairing design at different wind speeds (20mph, 50mph, and 80mph). By comparing the drag, the experiment showed the most aerodynamically efficient design.

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