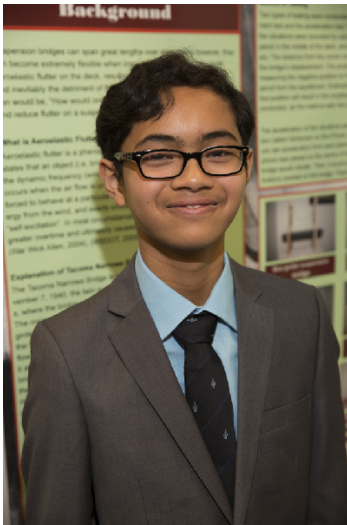


CWSF 2016 - Montreal, Quebec



Dylex Suan

An Investigation on Aeroelastic Flutter Reduction of Suspension Bridges

Challenge: Innovation

Category: Junior

Region: Bay Area

City: Burlington, ON

School: St. Christopher Elementary School

Abstract: A wind tunnel was constructed to examine the acceleration and magnitude of vibrations on girders in bridge models when impacted by certain wind velocities. Box and truss girders are able to streamline air flow in order to increase aerodynamic resiliency and reduce the probability of aeroelastic flutter on suspension bridges. Furthermore, these decks effectively mitigate amplitude displacement and acceleration compared to plate girders.

Biography

Hello, my name is Dylex Suan and I am a Grade 8 student at St. Christopher's School in Burlington, Ontario. I enjoy playing piano, playing video games, reading books and programming. My favourite subjects in school are music, math, and science. This is my first time participating in CWSF, and I am truly excited to meet with other people across the country. I was inspired to develop this inquiry when I read about the Tacoma Narrows Bridge collapse. Afterwards, I wanted to investigate how to increase aerodynamic resiliency on suspension bridges, as these bridges are flexible and vulnerable to dynamic structural failure. I plan to expand on this project by attempting to innovate a cost-efficient design that can be used in suspension bridges so that construction costs are reduced. My advice to anybody who pursues a science project is to find a topic that you are really excited about, even if it's truly abstract. Then, go research and dig deeper into it. Also, you should never stop discovering or inventing new ways, because that's what makes you a true scientist or engineer. In the future, I would want to become a civil or mechanical engineer, or go into software development.

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