

Binghamton Hyperloop

Anthony Dorsa, Kasey Hill, Darren Silvanic, and Boxu Zhu

Binghamton University, Binghamton, NY 13902, USA

Corresponding author's Email: khill14@binghamton.edu

Author Note: Binghamton Hyperloop is composed of seventeen seniors of the Watson School of Engineering. The following document is representative of the combined efforts of the entire team, but has been condensed by the listed authors. Binghamton Hyperloop would like to thank our project sponsor Avangrid, as well as the private and corporate donors that keep this project alive.

Abstract: The future of civilization is the future of transportation. In 2013, Elon Musk released a white paper on Hyperloop, a high-speed bullet train inspired by vacuum tube technology. SpaceX has challenged universities from across the globe to build a small scale Hyperloop Pod. This year, Binghamton Hyperloop is designing a pod that optimizes efficiency and maximizes speed. In accordance with competition requirements, the pod is self-propelled with successful means of deceleration. A unique feature of the design includes the actuation of magnetic levitation skis after reaching a target velocity of ~200mph, which decreases magnetic drag. Our design reduces mechanical complexity and prioritizes safety with a hard-kill switch for emergency use. The Binghamton Hyperloop team is comprised of 17 students from various engineering backgrounds and has qualified as a top 50 semifinalist in the 2018 SpaceX Competition. Together, we are looking to creating the future of transportation.

Keywords: Transportation, Hyperloop, Levitation, SpaceX