

# Aerodynamics of bobsleighs and skeletons : wind tunnel and CFD results

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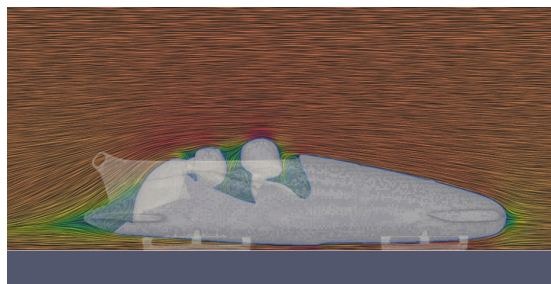
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Aerodynamic performance has a significant impact on bobsleighs and skeletons [1, 2]. Using a full-scale wind tunnel, measurements of the aerodynamic coefficient  $SC_z$  for both single and two-person bobsleighs, as well as for skeletons, are conducted. Utilising the data obtained from these experiments, a Computational Fluid Dynamics (CFD) model is developed to accurately simulate the aerodynamic behavior of the bobsleighs and skeletons. The CFD model is then employed to investigate the aerodynamic performance of the bobsleigh and skeleton. Specifically, the study focuses on analysing how different positions and orientations of these vehicles on the track influence their aerodynamic efficiency. By varying these parameters, the research aims to identify optimal configurations which enhance sports performance.



*Experimental set-up used to measure the aerodynamic coefficient  $SC_z$  of a two-person bobsleigh*



*CFD simulation of the two-person bobsleigh featured above using the model developed with experimental measurement*

## References

- [1] Winkler & Pernpeintner, The engineering of sport **7**, 329–338 (2009)
- [2] Dabnichki & Avital, Journal of Biomechanics **39**, 2733–2742 (2006)