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Simultaneous drag and flow measurements of Olympic skeleton athletes YAE EUN MOON, DAVID DIGIULIO, RPI, STEVE PETERS, US Bobsled & Skeleton Federation, TIMOTHY WEI, RPI — The Olympic sport of skeleton involves an athlete riding a small sled face first down a bobsled track at speeds up to 130 km/hr. In these races, the difference between gold and missing the medal stand altogether can be hundredths of a second per run. As such, reducing aerodynamic drag through proper body positioning is of first order importance. To better study the flow behavior and to improve the performance of the athletes, we constructed a static force balance system on a mock section of a bobsled track. Athlete and the sled are placed on the force balance system which is positioned at the exit of an open loop wind tunnel. Simultaneous drag force and DPIV velocity field measurements were made along with video recordings of body position to aid the athletes in determining their optimal aerodynamic body position.

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