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The turbulent wake of a submarine model at varying pitch and yaw angle ANAND ASHOK, Princeton University, TYLER VAN BUREN, Rensselaer Polytechnic Institute, ALEXANDER SMITS, Princeton University and Monash University — Experiments are reported to examine the effects of pitch and yaw angle on the mean flow and turbulence in the wake of an axisymmetric DARPA SUBOFF submarine model. Measurements in the wake were performed at a Reynolds number based on the length of 2.4×10^6 . Three component velocity measurements were taken at eight cross-stream planes, downstream of the trailing edge of the model ($2 < x/D < 26$), using Stereoscopic Particle Image Velocimetry. The pitch and yaw angles were in the range 0 to $\pm 10^\circ$. Two-point, crossed wire measurements in the wake of the same submarine model in the axisymmetric configuration over a wide range of numbers based on the length between 1×10^6 and 67×10^6 are also presented. Work supported by ONR Grant N00014-13-1-0174.

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