

Abstract Submitted  
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**Polymer Drag Reduction: Impact on Near-Wall Structure.**<sup>1</sup>

BRIAN ELBING, Oklahoma State University-Stillwater — Even though it had been thought to be well understood for decades, recent work has shown that the classical view of how drag-reducing polymer solutions modify the mean turbulent velocity profile is incorrect. The classical view is that the log-region is unmodified from the traditional law-of-the-wall for Newtonian fluids, though shifted outward in proportion to the level of drag reduction. However, improvements to both experimental methods and DNS modelling has demonstrated that polymeric properties also play a critical role, especially at higher drag reduction levels. Over the past few years, there have been great strides with improving our understanding of the impact of polymer properties on the near-wall modifications. This presentation will give an overview of our recent advancements including details of the modifications to both the mean structure as well as coherent structures.

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