

Abstract Submitted
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Computational framework for understanding flow in large vessels

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— It is widely accepted that hemodynamic flow structures, such as separation or recirculation, play an important role in the progression of vascular diseases and vascular remodeling. However understanding these flow structures and how they accompany biologic response is far from being well understood. Medical imaging can allow a qualitative understanding of the flow through large vessels, but obtaining quantitative information or parametric analysis inevitably requires computational models. We will present computations from patient- specific and idealized vascular models. These computations reveal complicated, three-dimensional flow structures. Previous simulations have often been under-resolved and the flow structures have not been sufficiently characterized. We will describe some of our progress on resolving these flow patterns, especially in regions susceptible to disease.

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