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Relationship between potential platelet activation and LCS SHAWN SHADDEN, Illinois Institute of Technology — In the study of blood flow, emphasis is often directed at understanding shear stress at the vessel wall due to its potentially disruptive influence on the endothelium. However, it is also known that shear stress has a potent effect on platelet activation. Platelet activation is a precursor for blood clotting, which in turn is the cause of most forms of death. Since most platelets are contained in the flow domain, it is important to consider stresses acting on the platelet as they are convected. Locations of high stress can correspond to boundaries between different dynamic regions and locations of hyperbolic points in the Eulerian sense. In the computation of LCS, strain in typically considered in the Lagrangian sense. In this talk we discuss the relationship between locations of potential platelet activation due to increased stress and locations of LCS marking increase Lagrangian deformation.

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