

Abstract Submitted
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Cavitation damage in blood clots under HIFU¹ HOPE WEISS, Department of Mechanical Engineering, University of California, Berkeley, GOLNAZ AHADI, THILO HOELSCHER, Department of Radiology, University of California, San Diego, ANDREW SZERI, Department of Mechanical Engineering, University of California, Berkeley — High Intensity Focused Ultrasound (HIFU) has been shown to accelerate thrombolysis, the dissolution of blood clots, *in vitro* and *in vivo*, for treatment of ischemic stroke. Cavitation in sonothrombolysis is thought to play an important role, although the mechanisms are not fully understood. The damage to a blood clot associated with bubble collapses in a HIFU field is studied. The region of damage caused by a bubble collapse on the fibrin network of the blood clot exposed to HIFU is estimated, and compared with experimental assessment of the damage. The mechanical damage to the network caused by a bubble is probed using two independent approaches, a strain based method and an energy based method. Immunofluorescent fibrin staining is used to assess the region of damage experimentally.

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