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**Convection of a Vortex Ring Parallel to a Plane Wall**[1] VANORA O'LOUGHLIN, DOUG BOHL, Clarkson University — In this work we investigate the motion and structure of a vortex ring convecting in a quiescent fluid parallel to a plane wall. The vortex rings were visualized using Laser Induced Fluorescence and recorded digitally. The plane wall was placed between 0.4-1.7 ring diameters away from the center of the ring. The results show that the vortex ring trajectory diverted towards the wall. The initial trajectory was described by inviscid flow models. As the ring came closer to the wall the interaction became viscous in nature. The portion of the ring closest to the wall interacted with the wall first and lost its coherence. The upper portion of the ring continued to convect towards the wall. This region induced a wall boundary layer that eventually separated and orbited the primary region of vorticity. In some cases the primary vortex ring also rebounded from the wall. The interaction was qualitatively similar to that of a vortex ring/oblique wall interaction once the trajectory was diverted towards the wall.

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