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**Apex Jets from Impacting Drops** JEREMY MARSTON,  
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of Singapore — A new jetting phenomenon has been observed experi-  
mentally when a viscous drop, such as glycerin, impacts onto a low-  
viscosity, low-surface tension liquid pool, such as methanol. This jet  
is produced by the ejecta sheet which emerges from the free surface of  
the pool, moves up along and wraps around the surface of the drop.  
The convergence and closure of this sheet at the top apex of the drop  
produces a thin vertical jet along the axis of symmetry at velocities of  
more than 10 times that of the drop. These jets are only observed for a  
narrow range of impact conditions. The drop impact velocity must be  
high enough that the ejecta sheet has sufficient inertia to reach the apex,  
but not so high that it detaches. Thus we identify critical Reynolds and  
Weber numbers. Jetting has been observed both for drops which are  
miscible and immiscible with the pool liquid, under a different range of  
impact conditions but never for pools of water, as the surface tension is  
then significantly larger than that of the drop. Marangoni stresses may  
act in this case to promote separation and prevent the jetting.

- Prefer Oral Session  
 Prefer Poster Session

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