

Abstract Submitted  
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**Capillary wave measurements on helically-supported capillary channels**<sup>1</sup> FAHIM CHANDURWALA, DAVID THIESSEN, Washington State University — NASA is considering power generation by the Rankine cycle to save weight on long-duration manned missions to the moon or Mars. Phase separation technology is critical to this process in microgravity. Arrays of capillary channels might be useful for filtering liquid drops from a flowing vapor. The efficiency of droplet capture by a helically-supported capillary channel is being studied. A droplet impinging on the channel launches capillary waves that propagate down the channel helping to dissipate some of the drop's kinetic energy. High-speed video of the channel combined with image processing allows for measurement of the amplitude and speed of the wave packets. Increasing the pitch of the support structure decreases the wave speed. An understanding of the dynamic response of the channel to drop impact is a first step in predicting drop-capture efficiency.

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