

Abstract Submitted  
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**Quantized decay of high charge superflow in an annular BEC**  
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ZORAN HADZIBABIC, University of Cambridge — We have studied superfluid  
flow using a holographically generated Laguerre-Gauss (LG) beam to trap and ro-  
tate Bose-Einstein condensates of  $^{87}\text{Rb}$  atoms. The LG beam allows phase windings  
with arbitrary choice of charge to be imprinted on the atomic cloud. The transferred  
angular momentum can be measured both interferometrically and mechanically. We  
have observed high charge vortices persist for long times ( $>40\text{s}$ ) and decay stochas-  
tically in a quantized fashion. We also discuss our latest results on the application  
of artificial gauge potentials to our annular BEC.

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